Motors

Automation

Energy

Transmission and Distribution

Coatings

SSW900 - AOI

Configuration

Driving efficiency and sustainability

WEG SSW900 AOI Configuration

Prerequisites

Exclusions

This document does not go into detail of setting up a controller in RSLOGIX/STUDIO 5000.

The connection and configuration of the IP network is beyond the scope of this document.

All non-communication specific parameters on the SSW900 are excluded from the configuration requirements of this document.

System Components

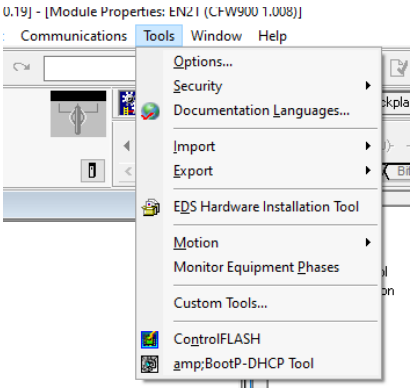
This document assumes that the following components are available and configured:

- ControlLogix or CompactLogix PLC controller running version 20 (or higher) firmware
- 10/100 or faster ethernet network with IP connectivity and IP addresses for both the PLC and SSW900

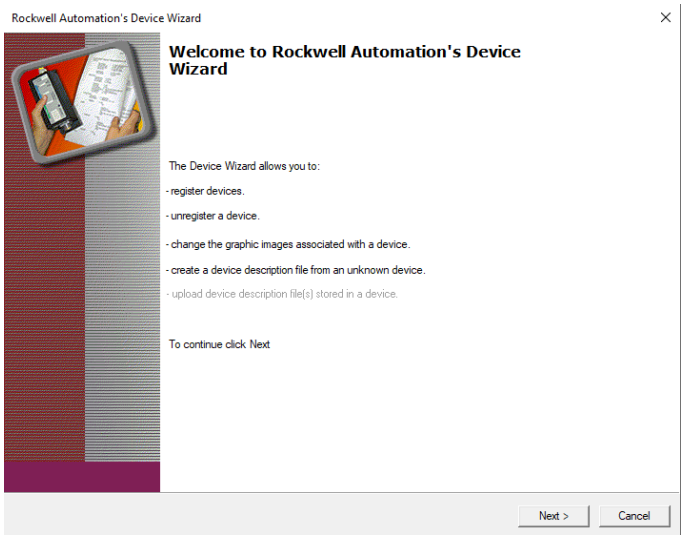
EDS Installation

Begin by adding the EDS file for the SSW900 if it is not already in the project.

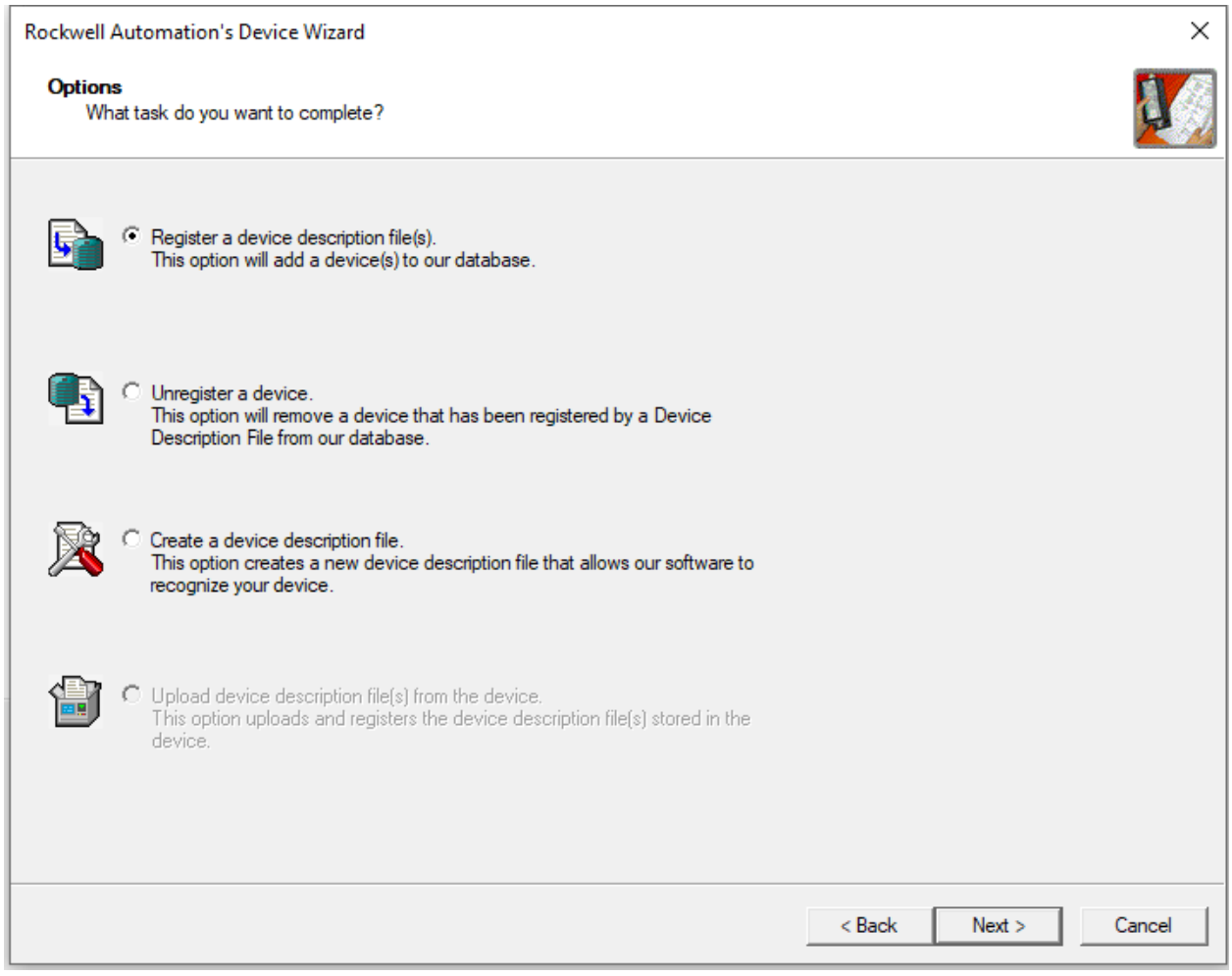
Note: please be sure to select the correct version of the EDS file. There are two versions. One is the SSW-CETH-W, and one is the SSW900-CETH-N. This example uses SSW-CETH-W.



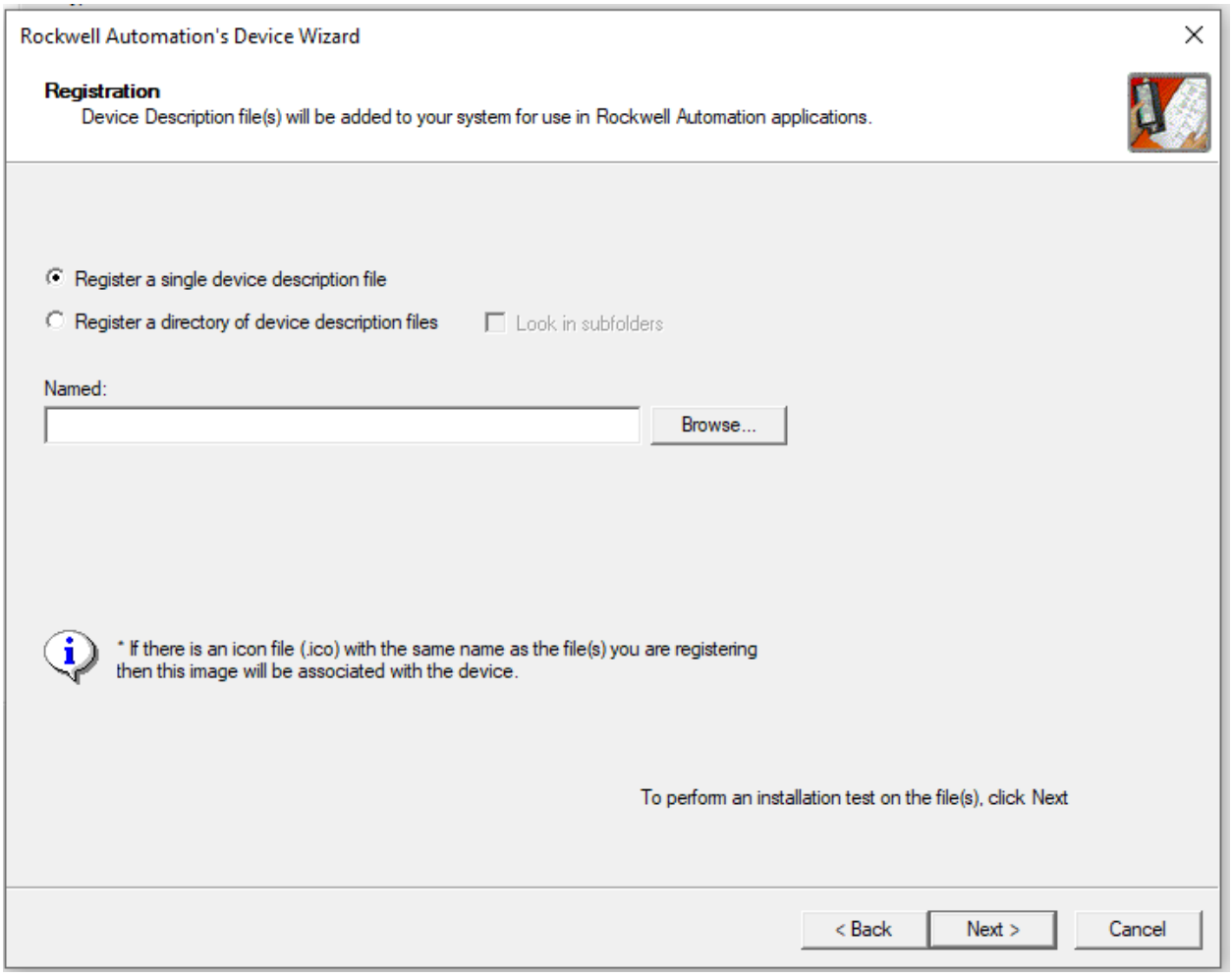
From inside Logix Designer, go to Tools -> EDS Hardware Installation Tool



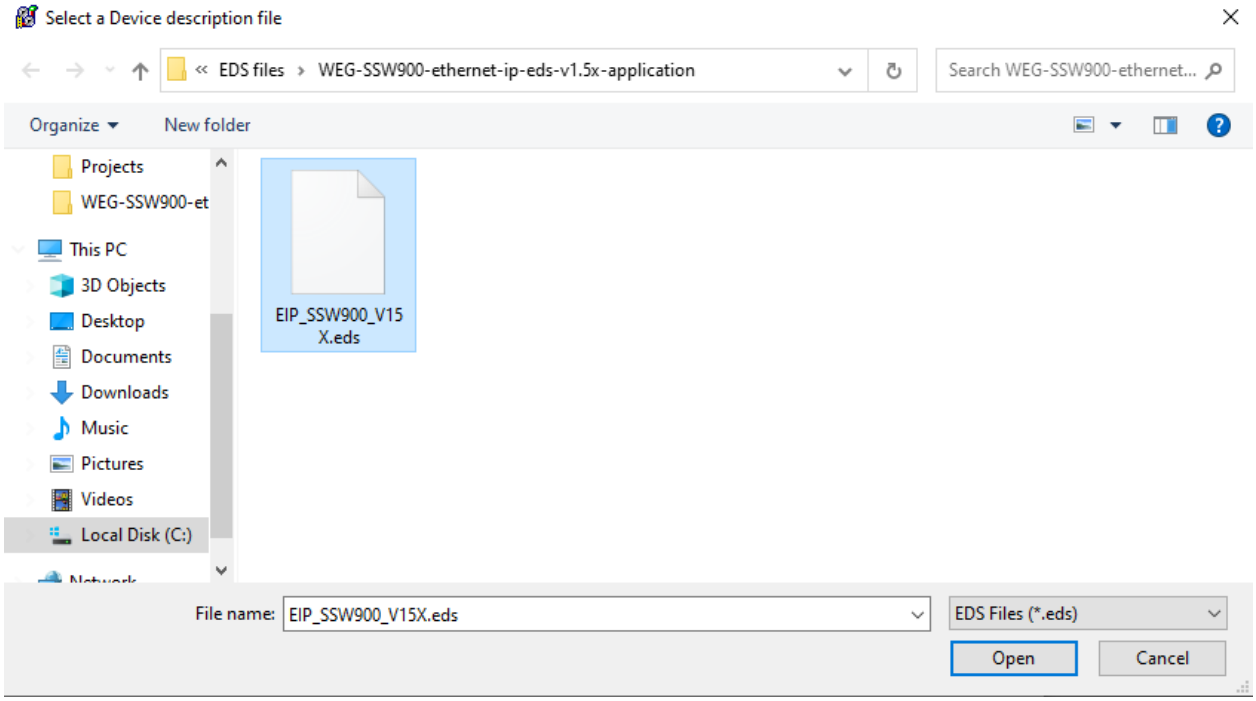
Click Next >



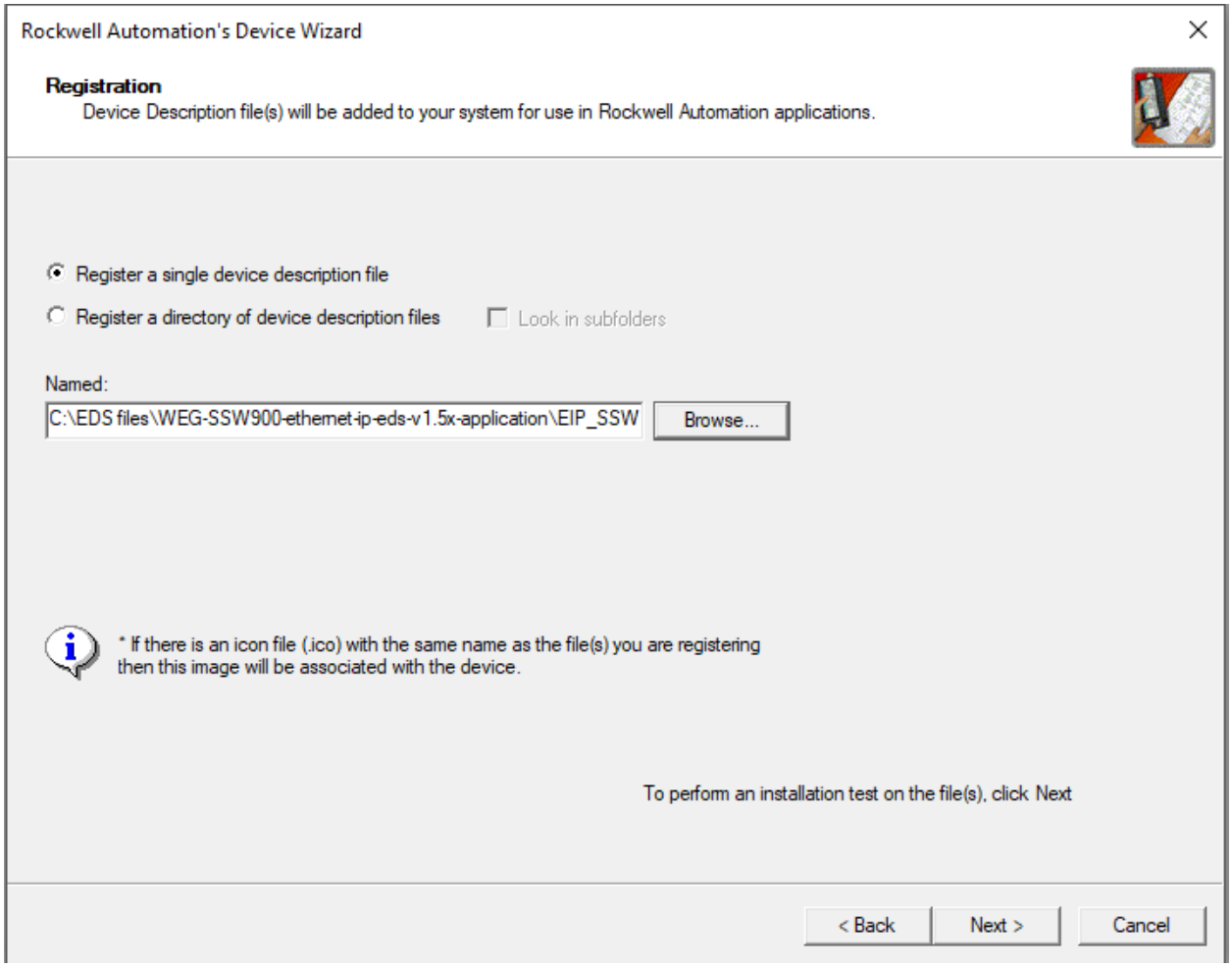
Click Next >



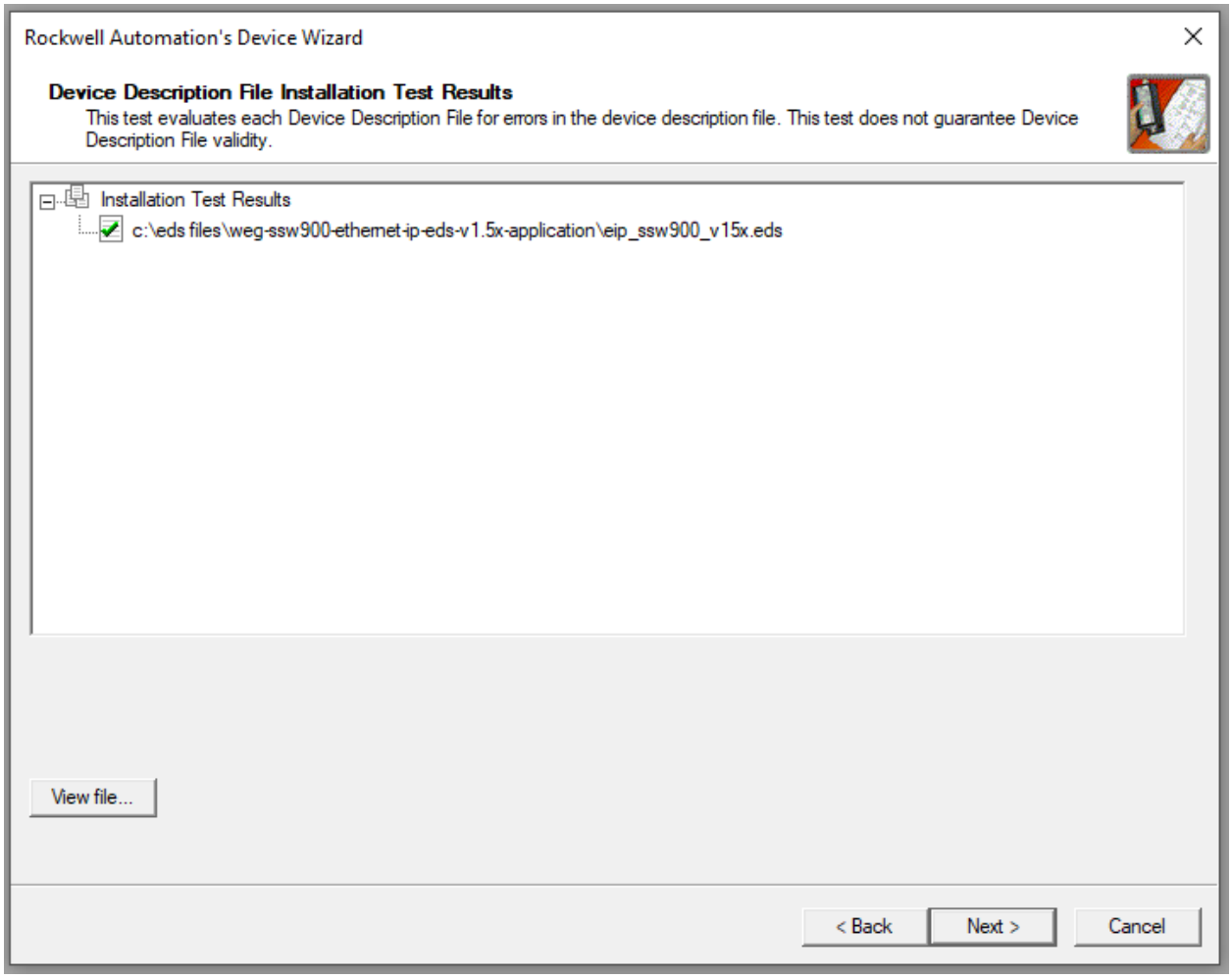
Click Browse ...



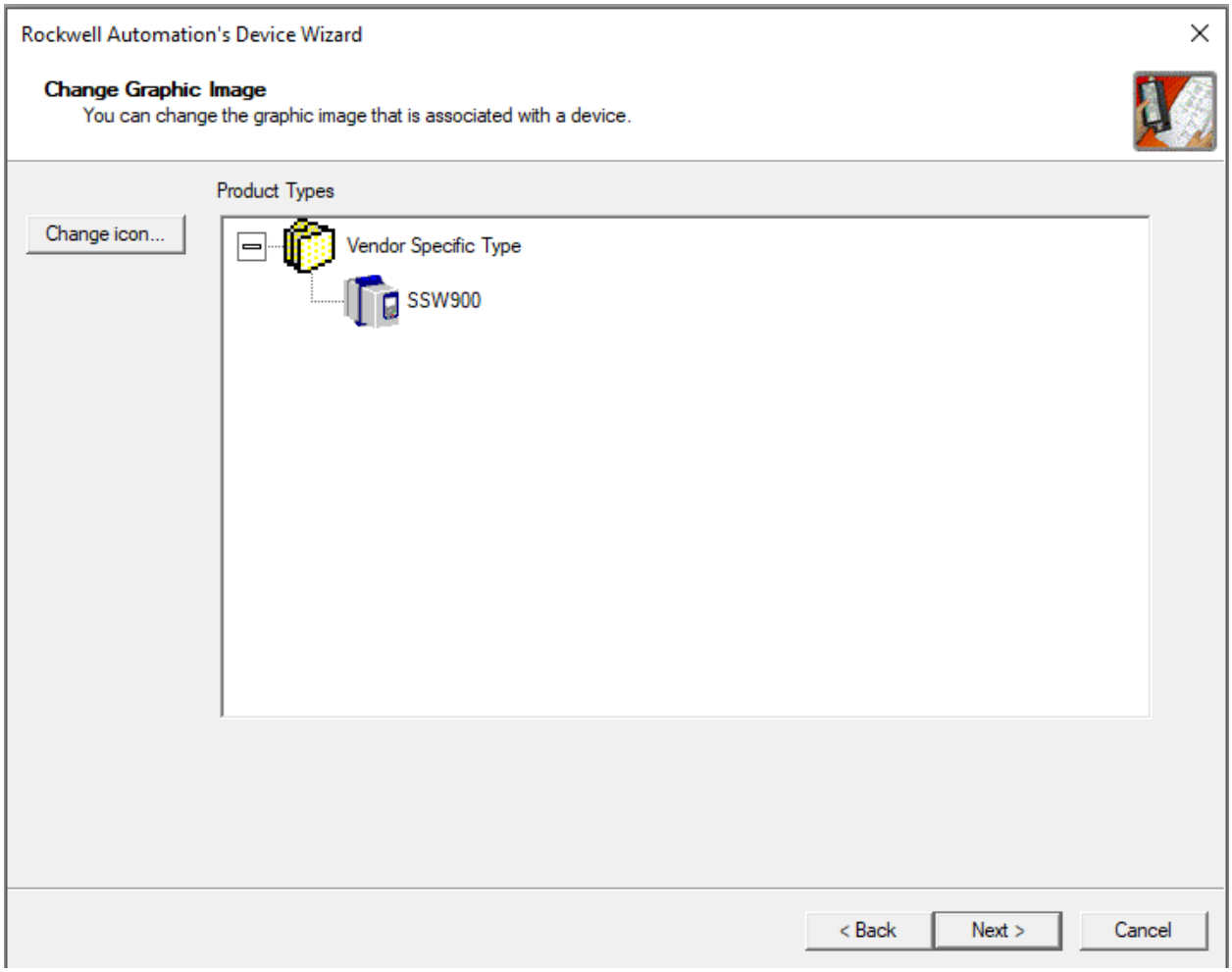
Browse to where the downloaded eds file is located and click Open


Rockwell Automation's Device Wizard
Registration
Device Description file(s) will be added to your system for use in Rockwell Automation applications.
Register a single device description file
Register a directory of device description files
Look in subfolders
Named:
C:\EDS files\WEG-SSW900-ethernet-ip-eds-v1.5x-application\EIP_SSW
Browse...
* If there is an icon file (.ico) with the same name as the file(s) you are registering then this image will be associated with the device.
To perform an installation test on the file(s), click Next
< Back
Next >
Cancel

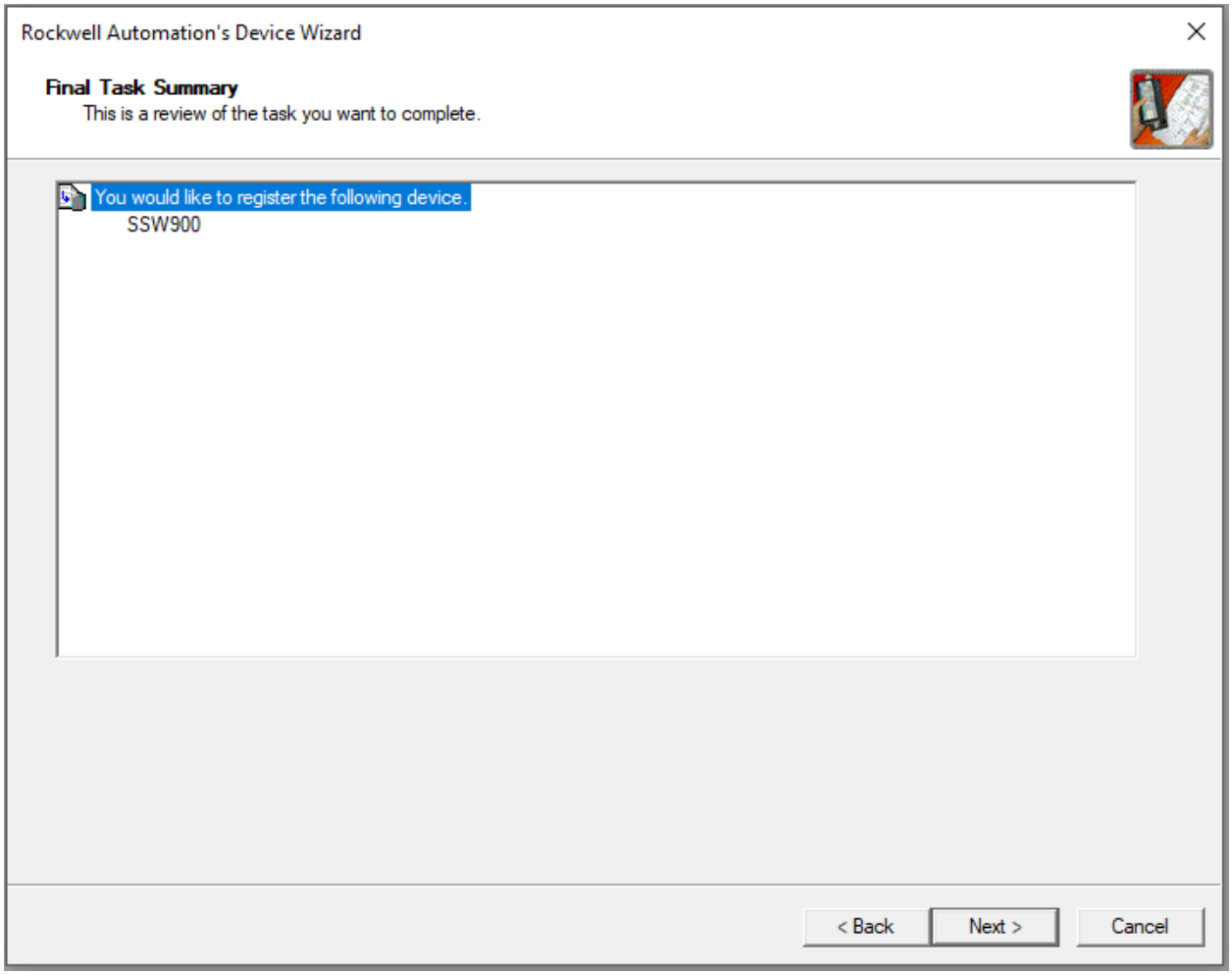
Click Next >



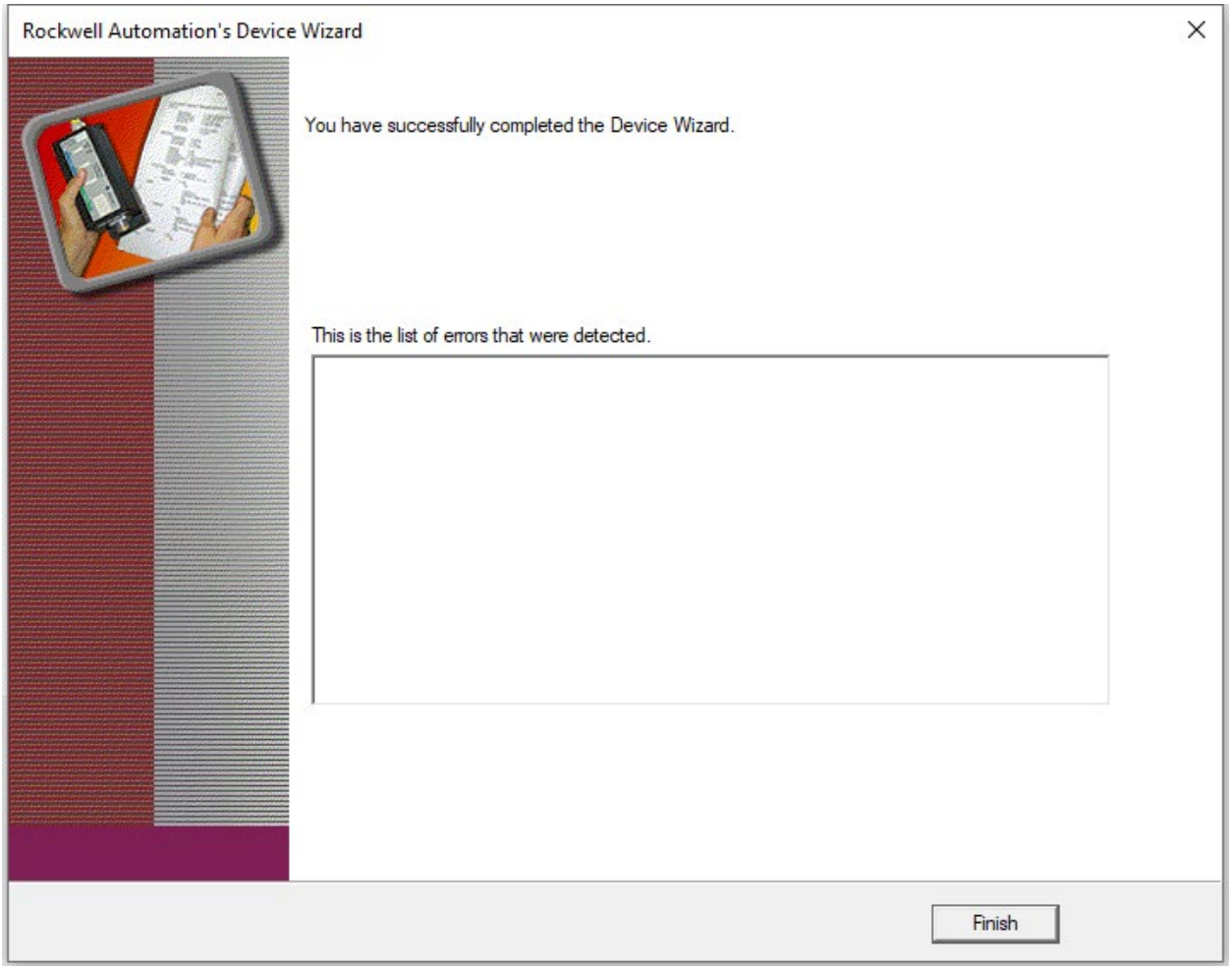
There should be a green checkmark. Click Next >


Rockwell Automation's Device Wizard
Change Graphic Image
You can change the graphic image that is associated with a device.
Product Types
Change icon...
Vendor Specific Type
SSW900
< Back
Next >
Cancel

Click Next >


Rockwell Automation's Device Wizard
Final Task Summary
This is a review of the task you want to complete.
You would like to register the following device.
SSW900
< Back
Next >
Cancel

Click Next >



Click Finish

The EDS file is now installed and the SSW900 can be added as an Ethernet/IP device in the device tree.

AOI

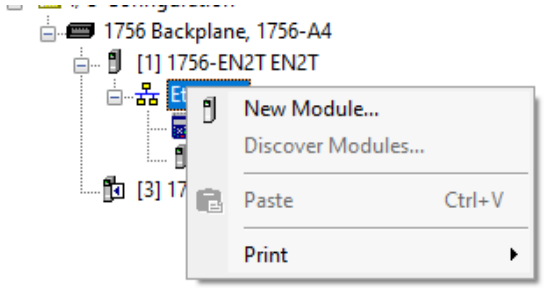
SSW900

This AOI controls the SSW900 and handles the following additional parameters:

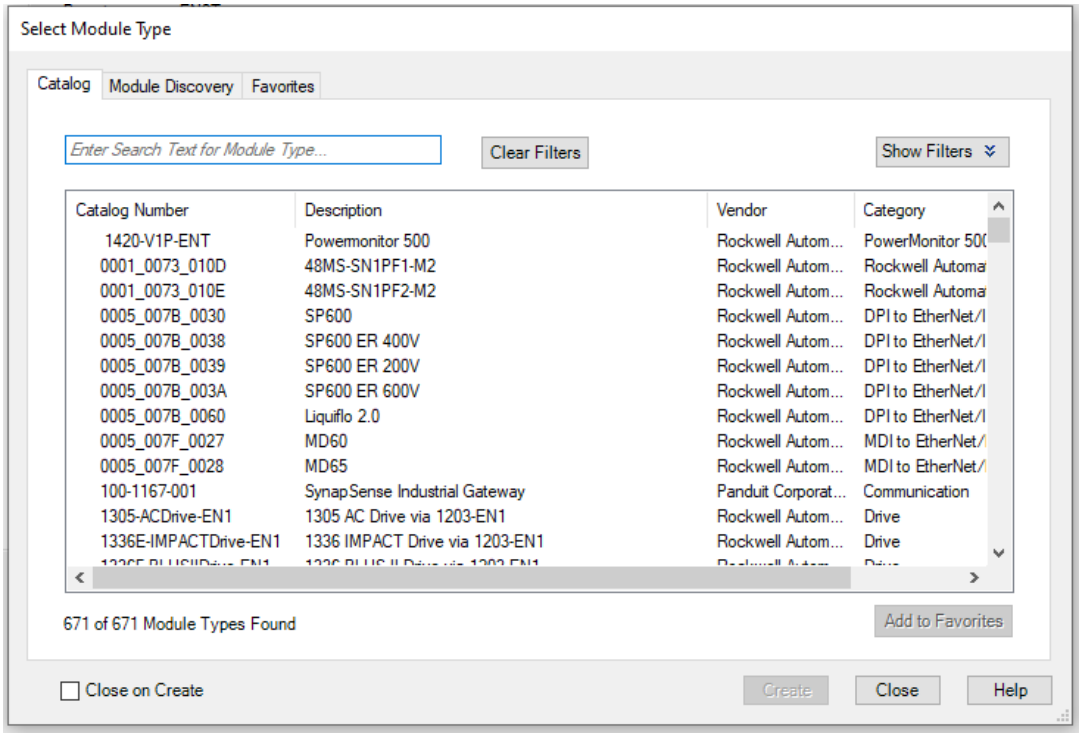
Outputs

- Output Current
- Output Torque
- Output Voltage
- Output Frequency
- Last Fault Code

Create the Ethernet/IP Device

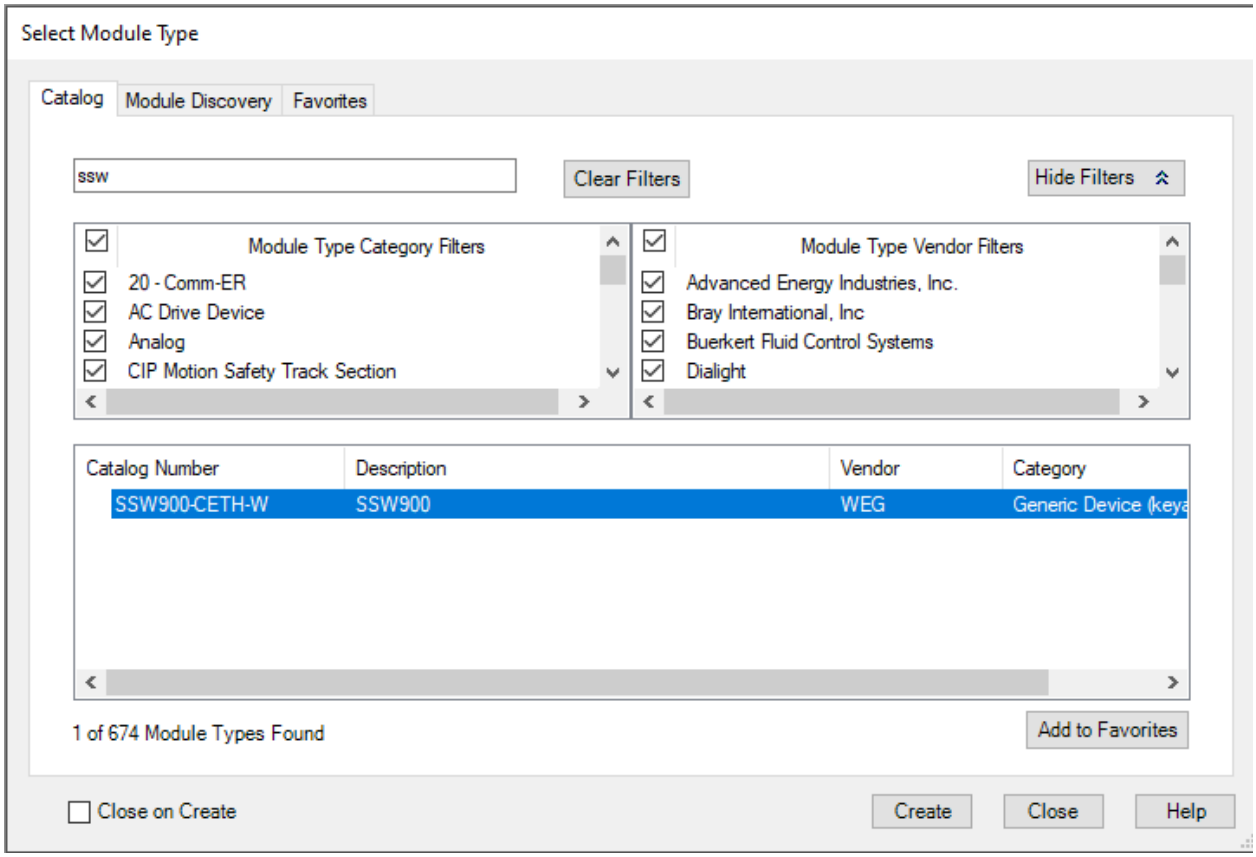


In the device tree, right click on the Ethernet bus that will contain the SSW900 and click New Module….



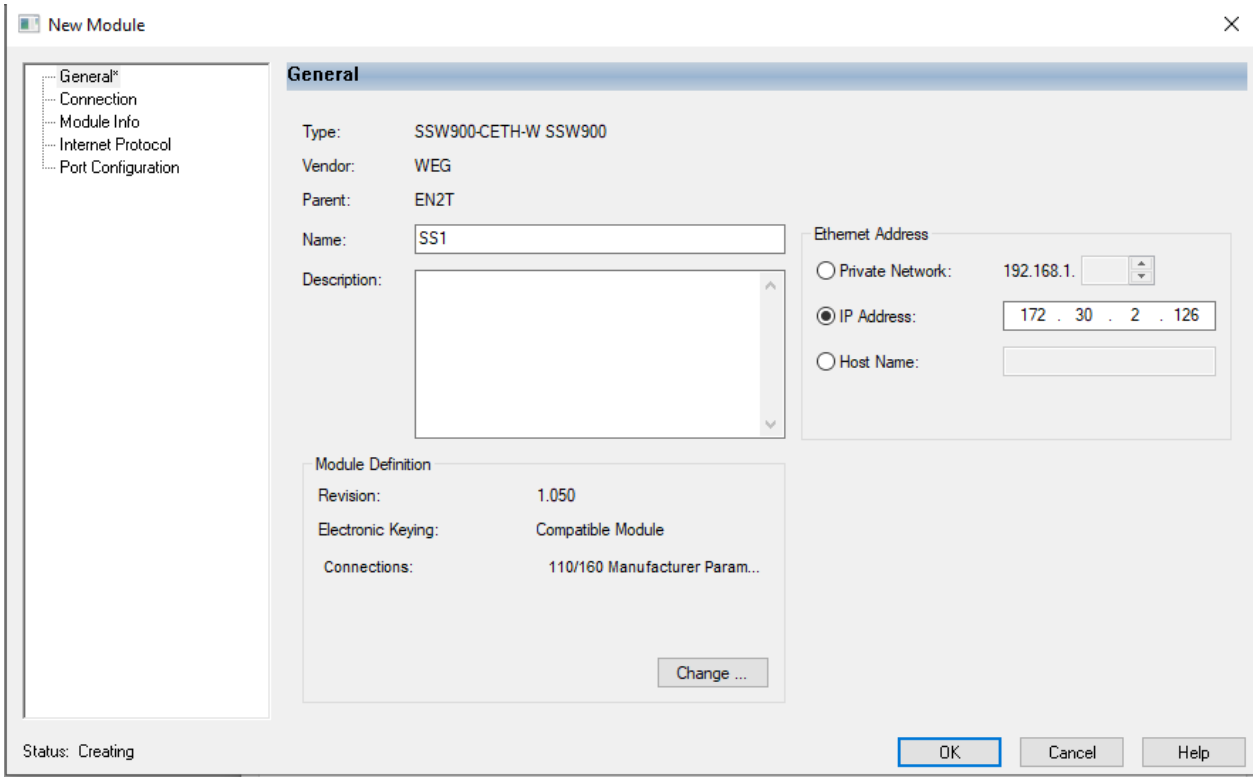
In the Select Module Type dialog box, enter in “SSW900” in the search field

Note: there are two versions of the EthernetIP card for the SSW900. This document assumes the model is the SSW-CETH-W. Using SSW900-CETH-N will require importing a different EDS file and creating a different device in the Ethernet tree. Beyond this, everything else remains the same.

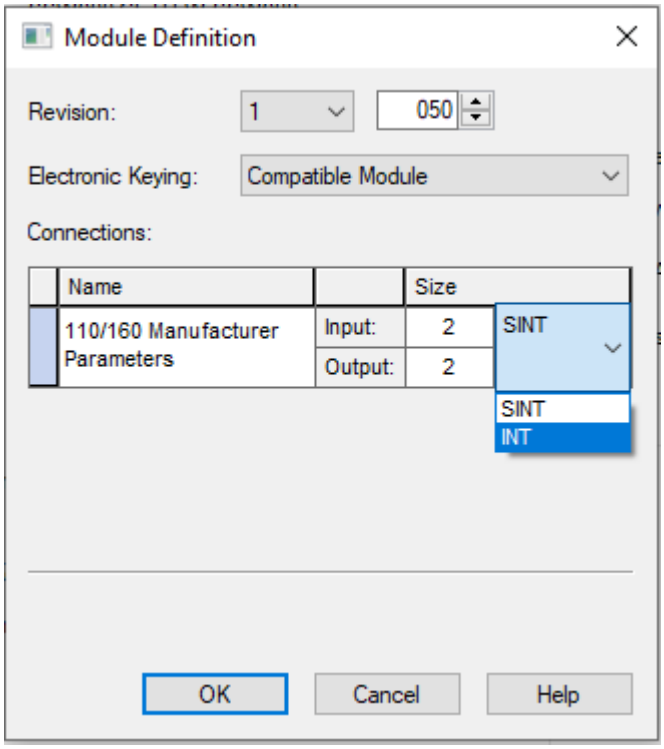


There should be an entry matching the above screenshot.

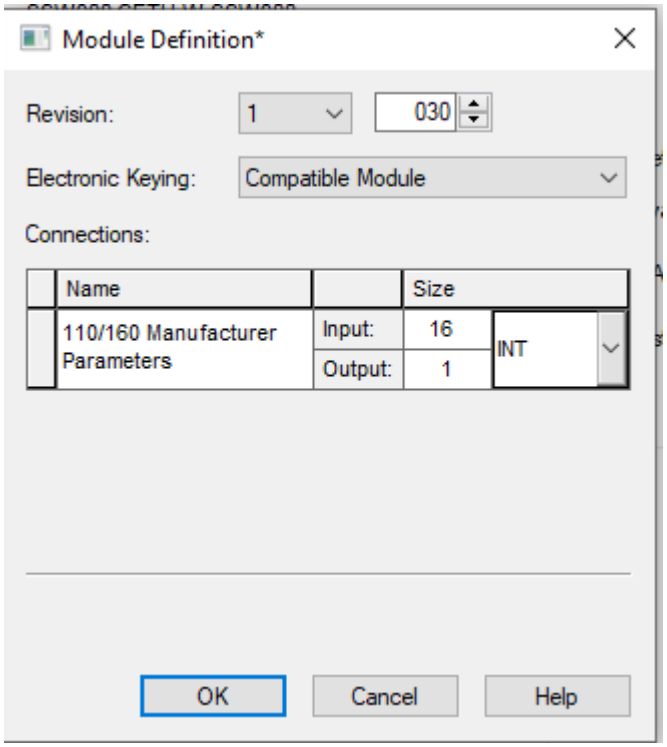
Highlight the SSW900-CETH-W and click Create



Give the SSW900 a Name and IP address. Before clicking on OK, click on the Change … button in the module definition.

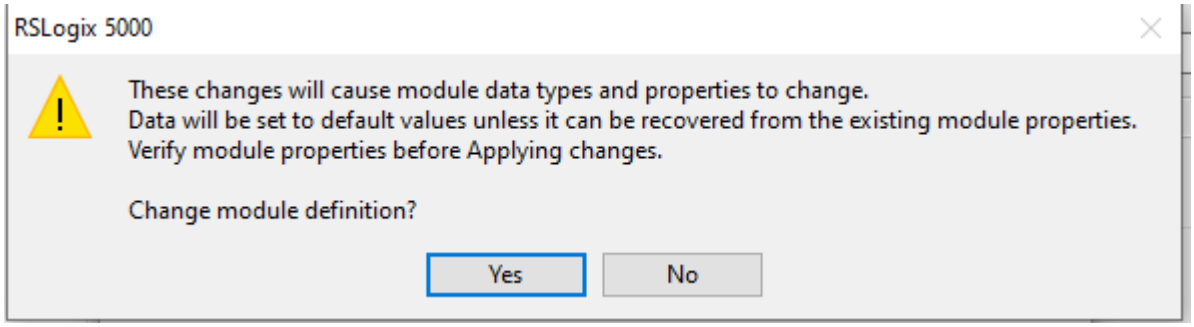


Change the type to INT



The Input and output size should be set to 16 and 1 respectively. Also, change the revision to 1.030. At the time of this publication, this is the firmware version available.

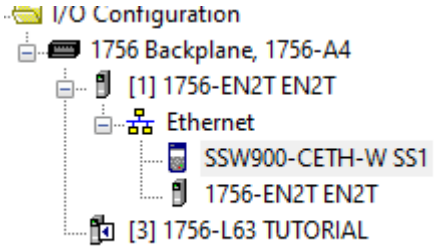
Click OK



Click Yes

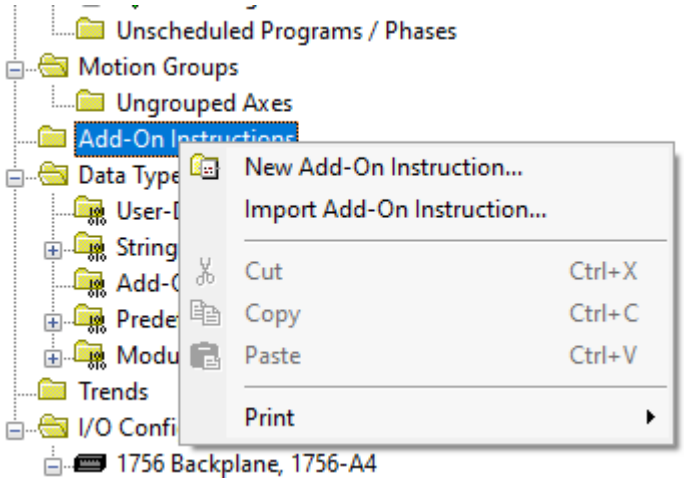
At this point, no other changes are required. However, changing the RPI can be done, if the need arises.

Once satisfied with the settings, Click OK

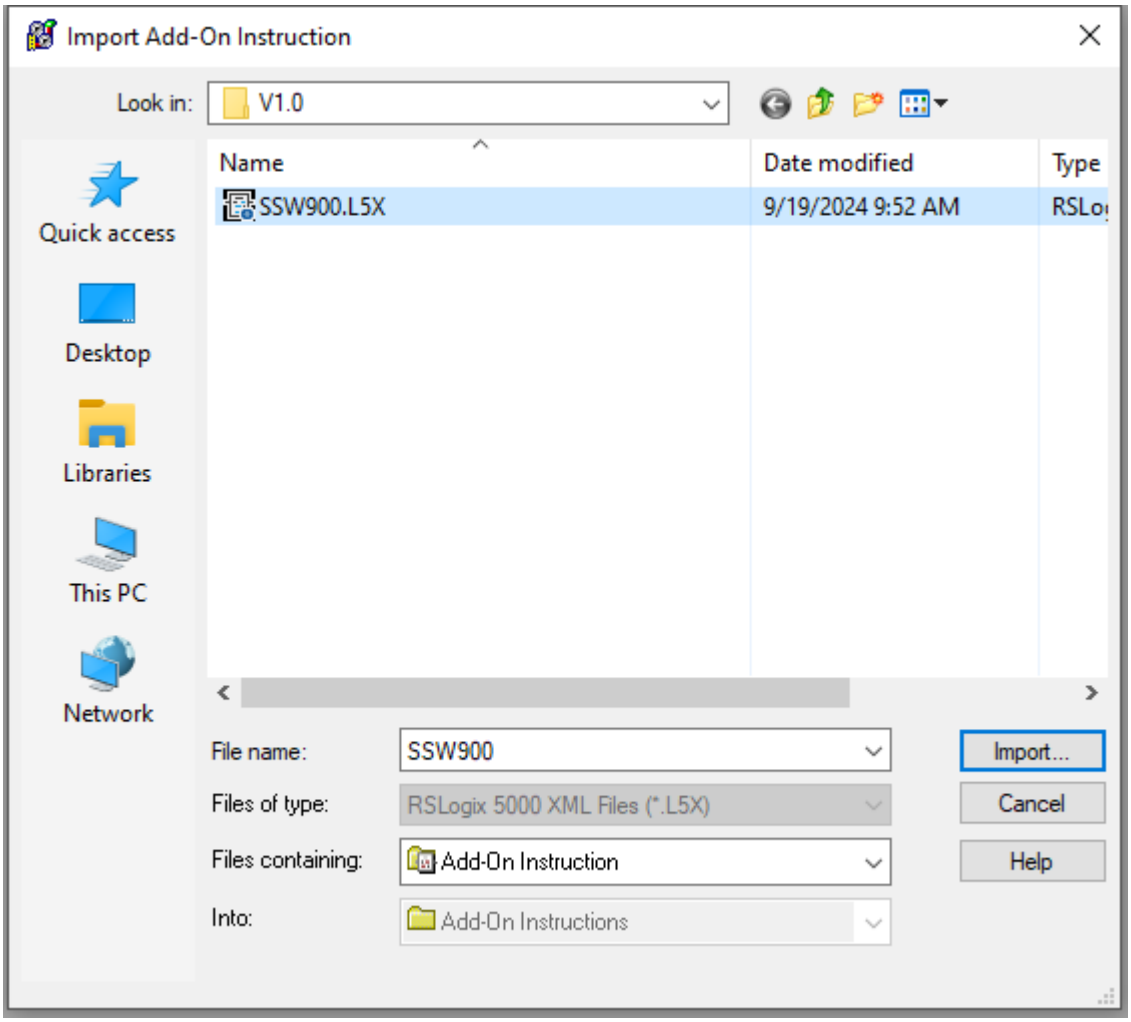


There should now be an instance of the SSW900 in the device tree

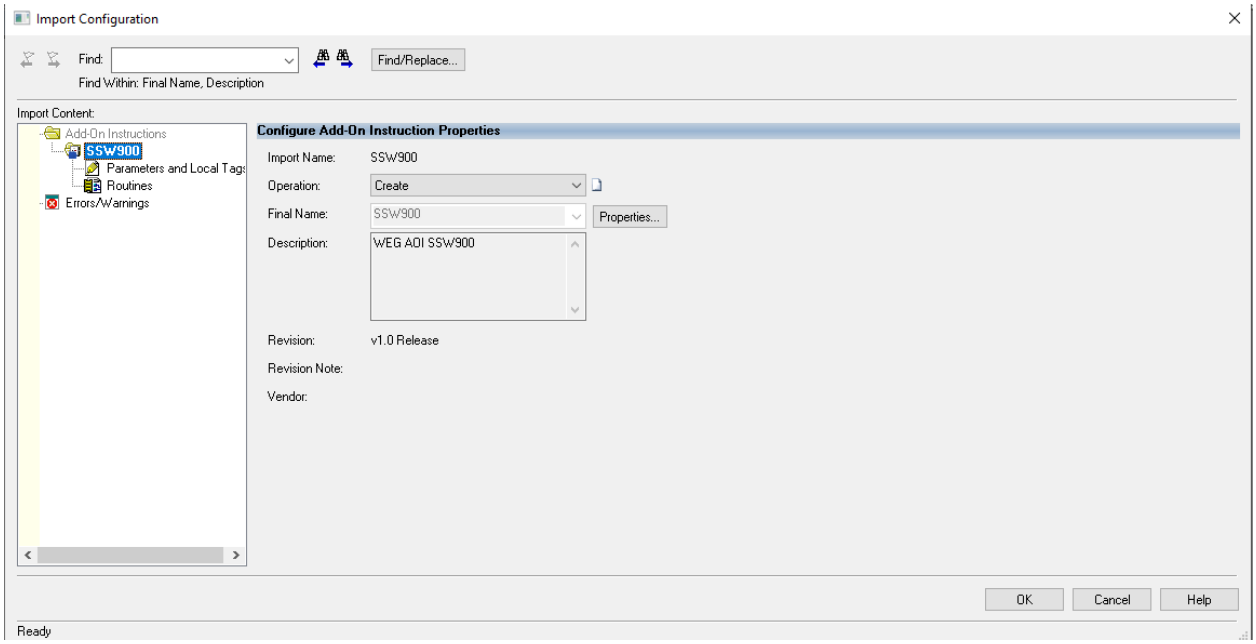
AOI Import



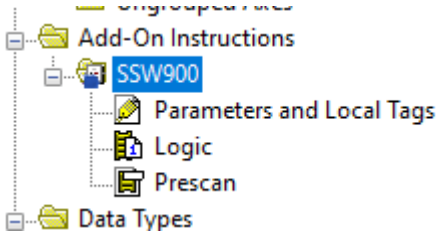
In the device tree, right click on Add-On Instructions and click on Import Add-On Instruction...



Select the appropriate add-on instruction (SSW900.L5X) and click Import….

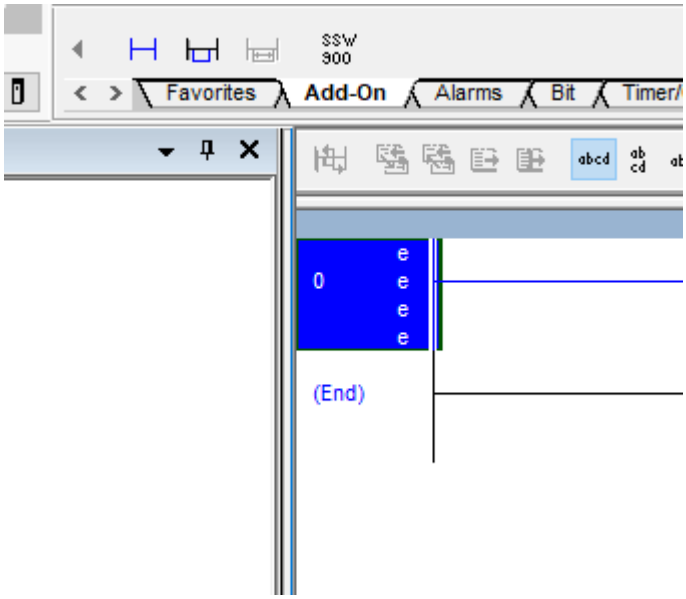


Review the proposed changes and click OK

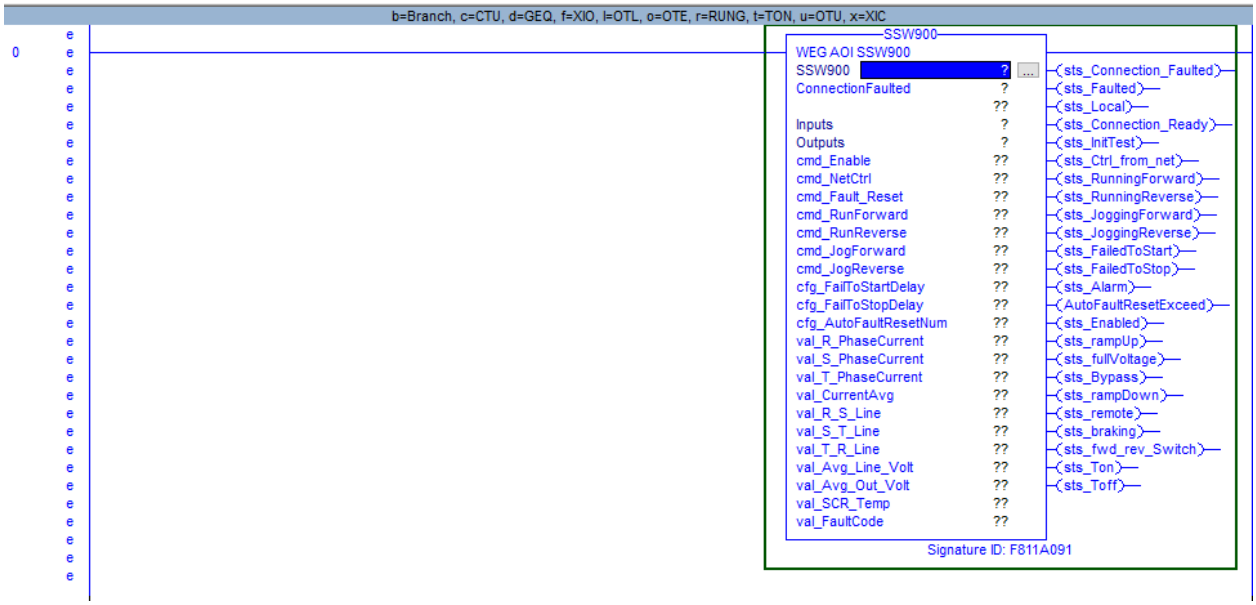


There should now be this add-on instruction in the project.

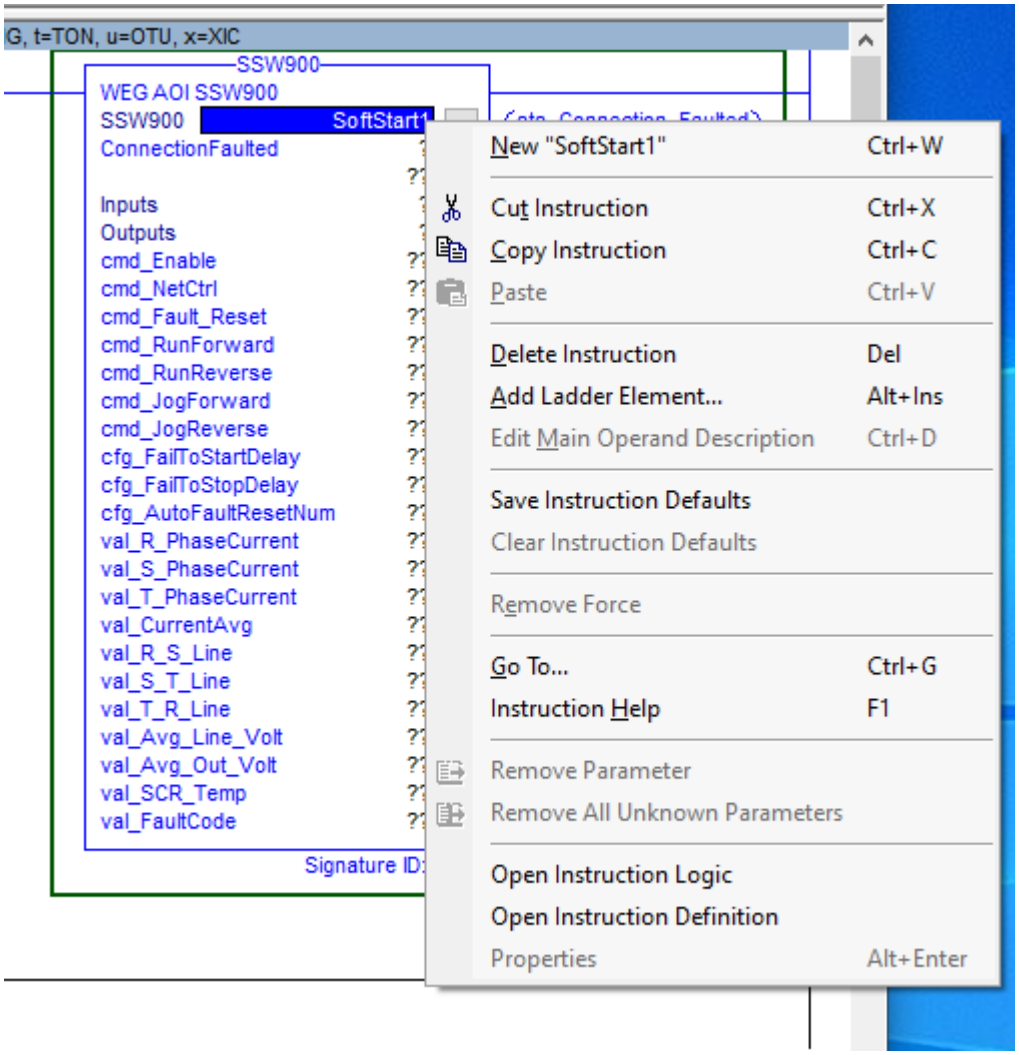
AOI Usage

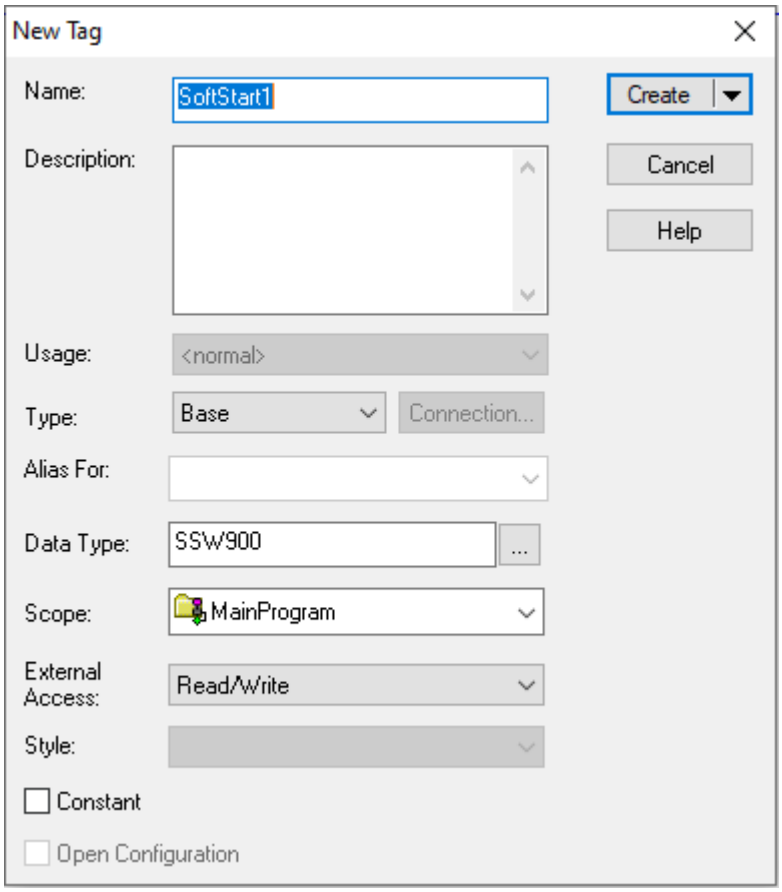


On an empty rung of ladder, add an instance of the newly imported add-on instruction by clicking on the Add-On bar and clicking the SSW900 symbol

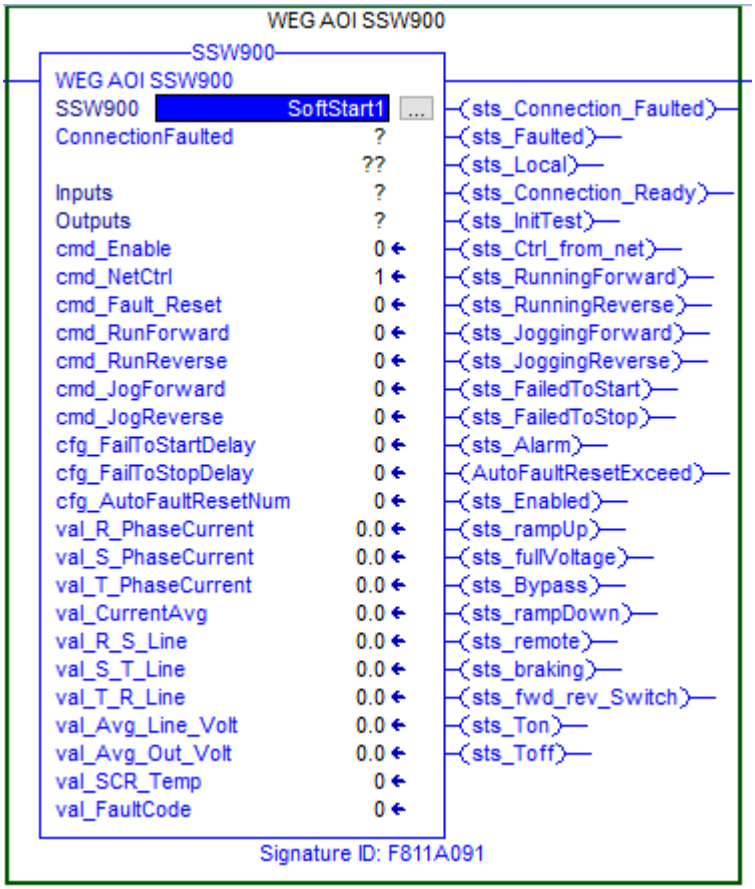


The Add-On requires a tag to be created. Create this tag by typing a name in the SSW900 field and right-clicking and selecting New “Tag”

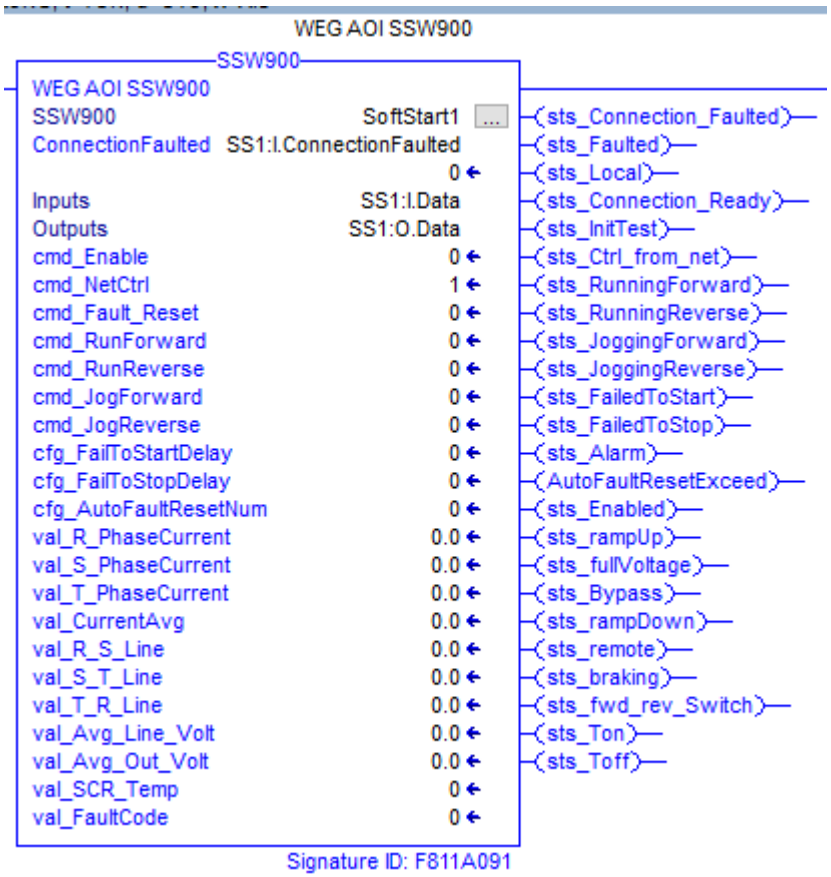

G, t=TON, u=OTU, x=XIC
SSW900
WEG AOI SSW900
SSW900
SoftStart1
ConnectionFaulted
Inputs
Outputs
cmd_Enable
cmd_NetCtrl
cmd_Fault_Reset
cmd_RunForward
cmd_RunReverse
cmd_JogForward
cmd_JogReverse
cfg_FailToStartDelay
cfg_FailToStopDelay
cfg_AutoFaultResetNum
val_R_PhaseCurrent
val_S_PhaseCurrent
val_T_PhaseCurrent
val_CurrentAvg
val_R_S_Line
val_S_T_Line
val_T_R_Line
val_Avg_Line_Volt
val_Avg_Out_Volt
val_SCR_Temp
val_FaultCode
Signature ID:
New "SoftStart1" Ctrl+W
Cut Instruction Ctrl+X
Copy Instruction Ctrl+C
Paste Ctrl+V
Delete Instruction Del
Add Ladder Element... Alt+Ins
Edit Main Operand Description Ctrl+D
Save Instruction Defaults
Clear Instruction Defaults
Remove Force
Go To... Ctrl+G
Instruction Help F1
Remove Parameter
Remove All Unknown Parameters
Open Instruction Logic
Open Instruction Definition
Properties Alt+Enter



Give any appropriate description and scope (the tag can be either program or controller scoped)



Next the Connection Faulted, Inputs, and Outputs need to be populated as follows:


WEG AOI SSW900
SSW900
WEG AOI SSW900
SSW900 SoftStart1 ...
ConnectionFaulted SS1:I.ConnectionFaulted
0
Inputs SS1:I.Data
Outputs SS1:O.Data
cmd_Enable 0
cmd_NetCtrl 1
cmd_Fault_Reset 0
cmd_RunForward 0
cmd_RunReverse 0
cmd_JogForward 0
cmd_JogReverse 0
cfg_FailToStartDelay 0
cfg_FailToStopDelay 0
cfg_AutoFaultResetNum 0
val_R_PhaseCurrent 0.0
val_S_PhaseCurrent 0.0
val_T_PhaseCurrent 0.0
val_CurrentAvg 0.0
val_R_S_Line 0.0
val_S_T_Line 0.0
val_T_R_Line 0.0
val_Avg_Line_Volt 0.0
val_Avg_Out_Volt 0.0
val_SCR_Temp 0
val_FaultCode 0
sts_Connection_Faulted
sts_Faulted
sts_Local
sts_Connection_Ready
sts_InitTest
sts_Ctrl_from_net
sts_RunningForward
sts_RunningReverse
sts_JoggingForward
sts_JoggingReverse
sts_FailedToStart
sts_FailedToStop
sts_Alarm
AutoFaultResetExceed
sts_Enabled
sts_rampUp
sts_fullVoltage
sts_Bypass
sts_rampDown
sts_remote
sts_braking
sts_fwd_rev_Switch
sts_Ton
sts_Toff
Signature ID: F811A091

AOI Parameter Description

InOut Parameters

Parameter	Type	Description
Inputs	INT[16]	Input Assembly from SSW900
Outputs	INT[1]	Output Assembly to SSW900

Input Parameters

Parameter	Type	Description
Cfg_FailToStartDelay	DINT	Time in seconds before faulting on fail to start if SSW900 does not start when commanded Set to 0 to disable
Cfg_FailToStopDelay	DINT	Time in seconds before faulting on fail to stop if SSW900 does not stop when commanded Set to 0 to disable
ConnectionFaulted	BOOL	From SSW900 Ethernet Module. 1 = Connection is faulted 0 = Connection is OK
cmd_Enable	BOOL	1 = Enable operation of SSW900 0 = Disable operation of SSW900
cmd_Fault_Reset	BOOL	1 = Send Reset Fault Signal to SSW900 0 = No action
cmd_JogForward	BOOL	1 = Jog Forward (if configured) 0 = No Action / Stop
cmd_JogReverse	BOOL	1 = Jog Reverse (if configured) 0 = No Action / Stop
cmd_NetCtrl	BOOL	1 = Remote (Ethernet) control 0 = Local (Other) control
cmd_RunForward	BOOL	1 = Run Forward 0 = Stop
cmd_RunReverse	BOOL	1 = Run Reverse 0 = Stop
cfg_AutoFaultResetNum	DINT	Maximum number of tries that AOI will send fault reset command while being maintained

Output Parameters

Parameter	Type	Description
sts_InitTest	BOOL	1 = Soft start going through initialization test

sts_Connection_Faulted	BOOL	Goes high when connections interrupted. If “Run” signal is set, it must be reset before this will clear 1 = Connection has been faulted from SSW900 to PLC 0 = Connection OK
sts_Connection_Ready	BOOL	1 = Connection from SSW900 to PLC is established 0 = Connection not established
sts_Ctrl_from_net	BOOL	1 = SSW900 controlled remotely (PLC) 0 = SSW900 controlled locally
sts_Bypass	BOOL	1 = Bypass relay active 0 = Bypass relay not active
sts_fullVoltage	BOOL	1 = Output voltage = Line voltage 0 = Output voltage != Line voltage
sts_Faulted	BOOL	1 = SSW900 Fault, connection fault, or failedToStart/Stop Fault 0 = No faults
sts_FailedToStart	BOOL	1 = SSW900 failed to start in time allotted 0 = Normal
sts_FailedToStop	BOOL	1 = SSW900 failed to stop in time allotted 0 = Normal
sts_rampUp	BOOL	1 = SSW900 is Ramping up during start
sts_rampDown	BOOL	1 = SSW900 is Ramping down during stop
sts_braking	BOOL	1 = SSW900 is actively braking to stop
sts_fwd_rev_Switch	BOOL	1 = SSW900 is actively switching between FWD and REV
sts_remote	BOOL	1 = SSW900 is in remote mode (PLC) 0 = SSW900 is in local mode (other)
sts_Local	BOOL	1 = Local 0 = Remote
sts_Ton	BOOL	1 = SSW900 Timer between starts preventing operation
sts_Toff	BOOL	1 = SSW900 Timer between stops preventing operation
sts_RunningForward	BOOL	1 = Running forward

		0 = Not running forward
sts_RunningReverse	BOOL	1 = Running reverse 0 = Not running reverse
val_FaultCode	DINT	Fault code 1 from SSW900
val_R_PhaseCurrent	REAL	R phase current in Amps
val_S_PhaseCurrent	REAL	S phase current in Amps
val_T_PhaseCurrent	REAL	T phase current in Amps
val_CurrentAvg	REAL	Average of all 3 phase currents
val_R_S_Line	REAL	R-S Line Voltage
val_S_T_Line	REAL	S-T Line Voltage
val_T_R_Line	REAL	T-R Line Voltage
val_Avg_Line_Volt	REAL	Average Line Voltage
val_Avg_Out_Volt	REAL	Average Output Voltage
val_SCR_Temp	REAL	SCR Temperature (Celsius)
AutoFaultResetExceed	BOOL	Indicates when the maximum number of automatic fault clears has been exceeded. Set cmd_Fault_Reset to 0 to reset and allow fault clear to resume. 1 = Max number of fault clears reached. Fault Reset Disabled 0 = Under threshold for automatic fault clears. Fault Reset Allowed.

SSW900 Parameter Requirements

The following parameters must be set in the SSW900:

Parameter	**Setting**
C3.1 (Net 220) Mode	9 – Slot1 LOC
C3.3 (Net 230) REM Command	4 – Slot 1
C8.1.1.1 (Net 712) Read Slot 1 1st Word	1
C8.1.1.2 (Net 713) Read Slot 1 Quantity	16
C8.1.2.1 (Net 714) Write Slot 1 1st Word	1
C8.1.2.2 (Net 715) Write Slot 1 Quantity	1
C8.1.1.5 (Net 1300) Read Word #1	680 – Status Word SSW
C8.1.1.6 (Net 1301) Read Word #2	90 – Fault Code
C8.1.1.7 (Net 1302) Read Word #3	26 – R Phase Current (1 of 2)
C8.1.1.8 (Net 1303) Read Word #4	26 – R Phase Current (2 of 2)
C8.1.1.9 (Net 1304) Read Word #5	28 – S Phase Current (1 of 2)
C8.1.1.10 (Net 1305) Read Word #6	28 – S Phase Current (2 of 2)
C8.1.1.11 (Net 1306) Read Word #7	30 – T Phase Current (1 of 2)
C8.1.1.12 (Net 1307) Read Word #8	30 – T Phase Current (2 of 2)
C8.1.1.13 (Net 1308) Read Word #9	24 – Average Current (1 of 2)
C8.1.1.14 (Net 1309) Read Word #10	24 – Average Current (2 of 2)

C8.1.1.15 (Net 1310) Read Word #11	33 – R-S Line Voltage
C8.1.1.16 (Net 1311) Read Word #12	34 – S-T Line Voltage
C8.1.1.17 (Net 1312) Read Word #13	35 – T-R Line Voltage
C8.1.1.18 (Net 1313) Read Word #14	4 – Average Line Voltage
C8.1.1.19 (Net 1314) Read Word #15	7 – Average Output Voltage
C8.1.1.20 (Net 1315) Read Word #16	60 – SCR Temperature
C8.1.2.6 (Net 1400) Write Word #1	685 – Slot 1 Command Word

WEG's scope of solutions is not limited to the products and solutions presented in this brochure.
Contact WEG for information on additional products and solutions.

For WEG's worldwide operations visit our website

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Duluth, GA

US.SSW900.AOI.Configuration