Technical Note

ProSoft TECHNOLOGY

MVI56(E)-MCMR Add-On Instruction Installation Guide

Modbus RTU/ASCII Serial Communication Module

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Add Modbus RTU/ASCII Serial Communication to ControlLogix with an Add-On Instruction for RSLogix® 5000 Version 16

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Introduction

Beginning with version 16 of RSLogix™ 5000 software, Rockwell Automation added an extremely helpful feature to make it easier that ever to set up third party modules, custom code, or proprietary code. They called this new feature an "Add-On Instruction" (AOI). This AOI feature allows third party vendors, panel builders, and system integrators to create ladder logic code that can be protected for safety or security reasons and can be locked to ensure that the code remains unchanged.

ProSoft Technology®'s inRAx® Modbus RTU/ASCII Serial Communication Module for ControlLogix®, the MVI56(E)-MCMR, is provided with an Add-On Instruction to allow easy integration of the module into new or existing RSLogix 5000 Version 16 and newer projects.

ProSoft Technology® has enhanced the MVI56(E)-MCMR module's Add-On Instruction in a way that will significantly simplify installation.

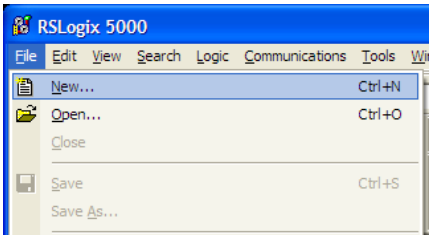
Now users can integrate the module into a new or existing project by importing a single ladder logic import file, as opposed to importing multiple User Defined Data Types and ladder logic rungs, one-by-one.

The entire ladder logic required by the MVI56(E)-MCMR is encapsulated in one, single Add-On Instruction. And, when the ladder logic .L5X file is imported, it automatically creates all the required User-Defined Data Types, Controller Tags, and the Add-On Instruction logic, all while adding the preconfigured AOI instruction to the ladder rung.

This new way of importing an AOI as a completed ladder rung enables quicker and easier integration of the MVI56(E)-MCMR with fewer chances for human typographical errors and ladder coding or setup errors.

Instructions

1 Open the **FILE** menu, and then choose **NEW…**



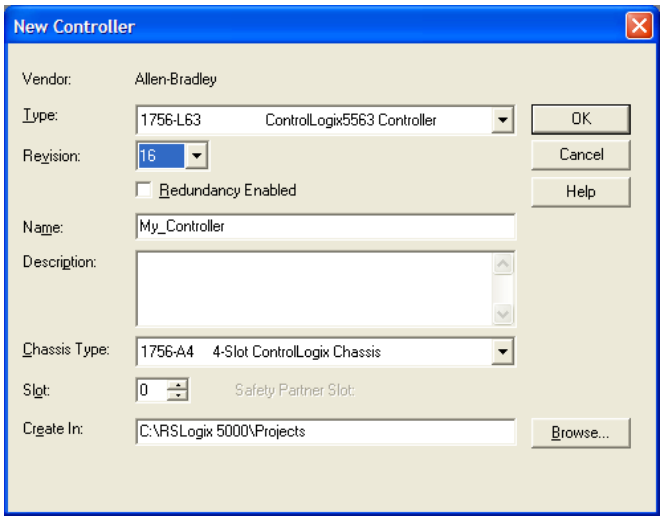
2 Select your ControlLogix controller model.

3 Select **REVISION 16**.

4 Enter a name for your controller, such as "My_Controller".

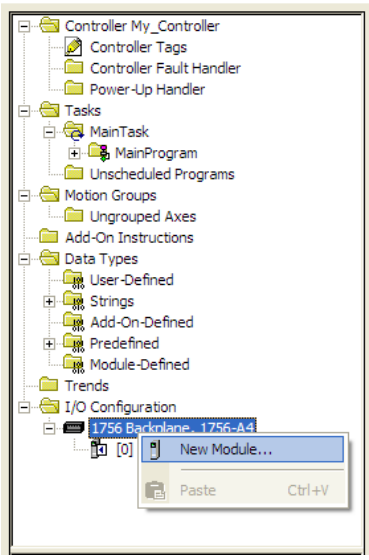
5 Select your ControlLogix chassis type.

6 Select **SLOT 0** for the controller.

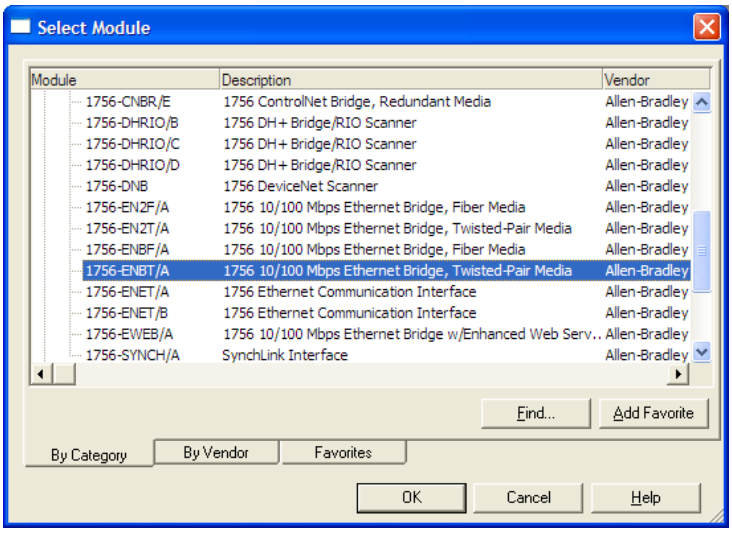


Next, create the network.

1 Right-click **I/O CONFIGURATION** and choose **NEW MODULE…**

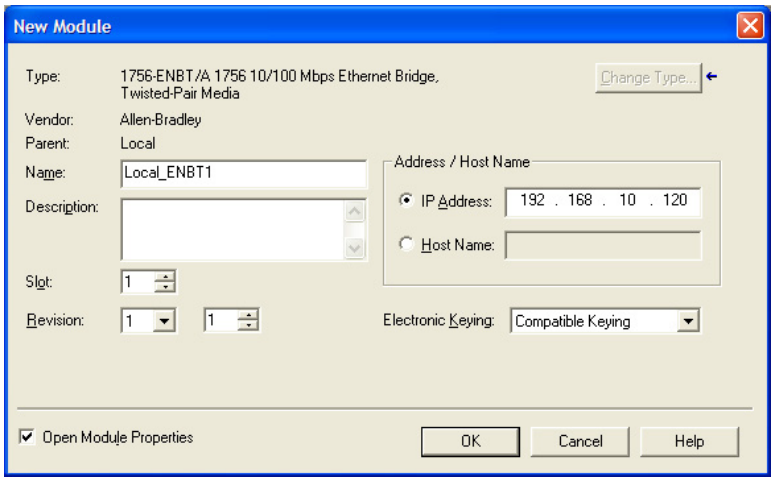


2 Expand the **COMMUNICATIONS** module selections and then select the Ethernet Bridge module that matches your hardware. This example uses a 1756-ENBT/A module.



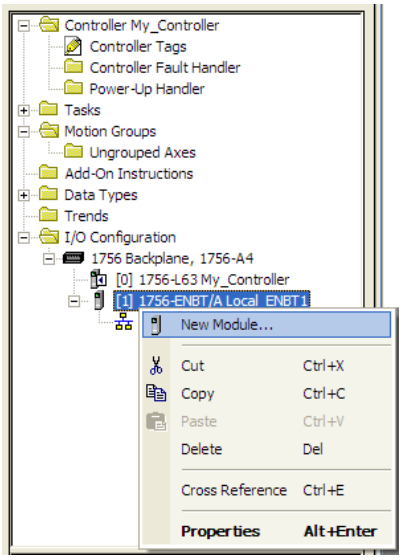
Note: If you are prompted to "Select Major Revision", choose the lower of the available revision numbers.

3 Name the ENBT/A module, then set the IP Address and slot location in the local rack with the ControlLogix processor.



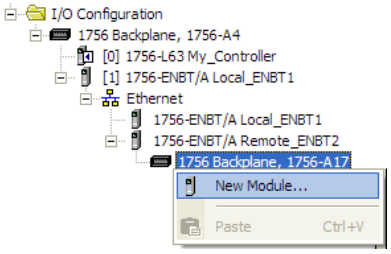
4 Click **OK**.

5 Next, select the **1756-ENBT** module that you just created in the Controller Organization pane and click the right mouse button to open a shortcut menu. On the shortcut menu, choose **NEW MODULE**.

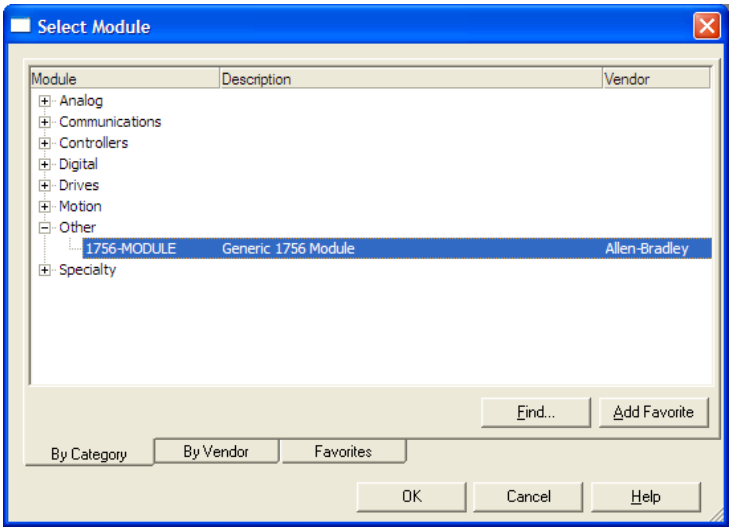


6 Repeat steps 2 and 3 to add the second EtherNet/IP module to the remote rack.

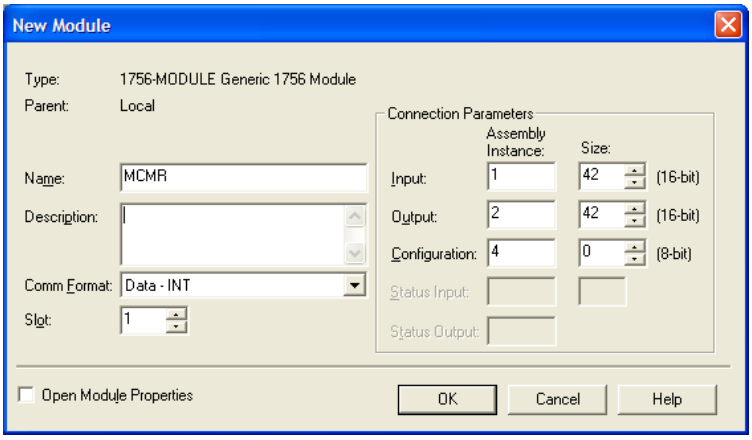
7 Select the remote **1756 BACKPLANE** node in the Controller Organization pane underneath the remote rack EtherNet/IP module you just created and click the right mouse button to open a shortcut menu. On the shortcut menu, choose **NEW MODULE**.



This action opens the **SELECT MODULE** dialog box.



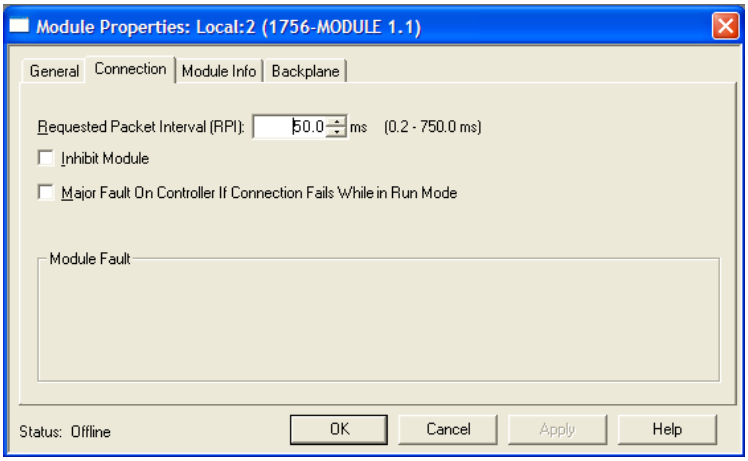
8 Select the **1756-MODULE (GENERIC 1756 MODULE)** from the list and click **OK.** This action opens the **NEW MODULE** dialog box.



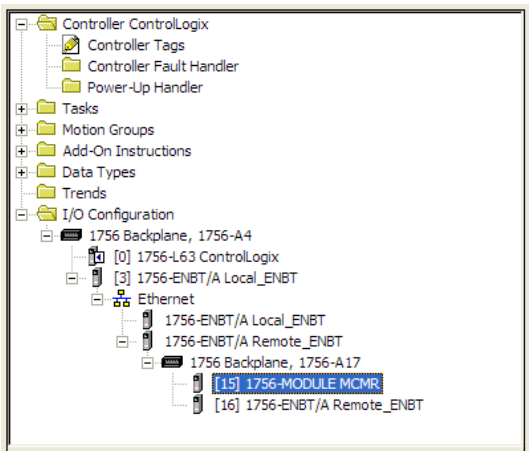
9 Set the Module Properties values as follows:

Parameter	Value
Name	Enter a module identification string. The recommended value is MCMR, as this name will be linked automatically with the MSG paths, irrespective of the slot location.
Description	Enter a description for the module. Example: ProSoft communication module for Modbus Serial protocol communications.
Comm Format	Select **DATA-INT** *(*Very Important*)*
Slot	Enter the slot number in the rack where the MVI56(E)-MCMR module is to be installed.
Input Assembly Instance	1
Input Size	42
Output Assembly Instance	2
Output Size	42
Configuration Assembly Instance	4
Configuration Size	0

10 On the **CONNECTION** tab, set the **RPI** value for your project. Fifty (50) milliseconds is usually a good starting value.



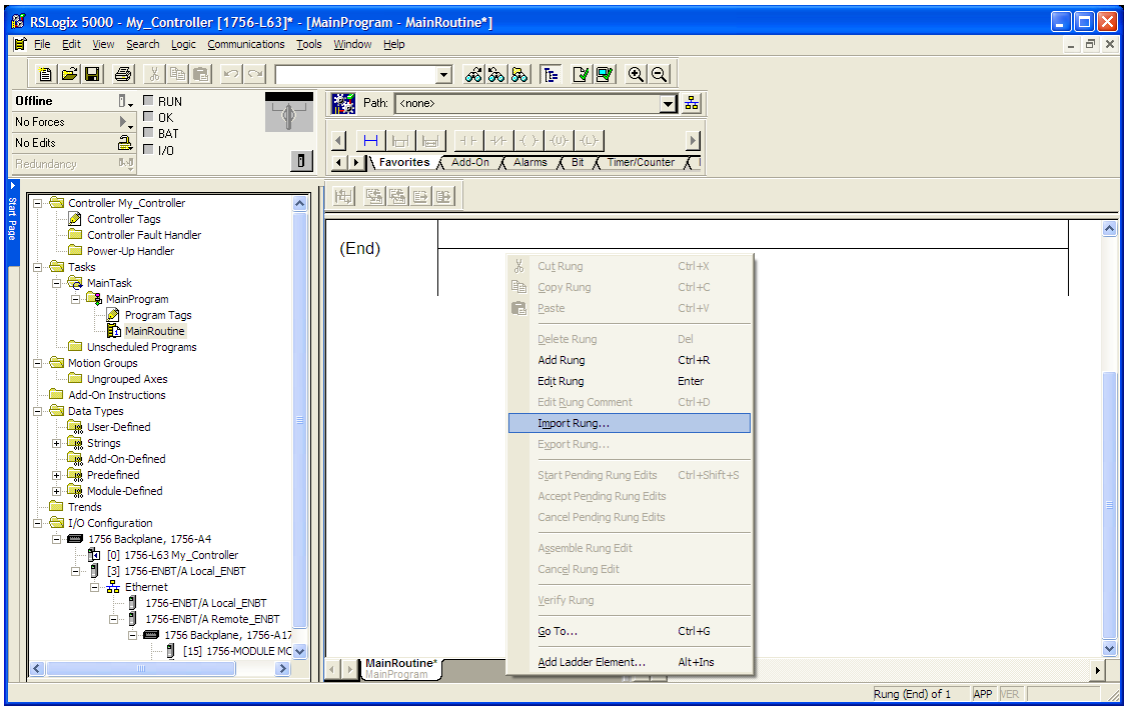
The **MVI56(E)-MCMR** module is now visible in the **I/O CONFIGURATION** section



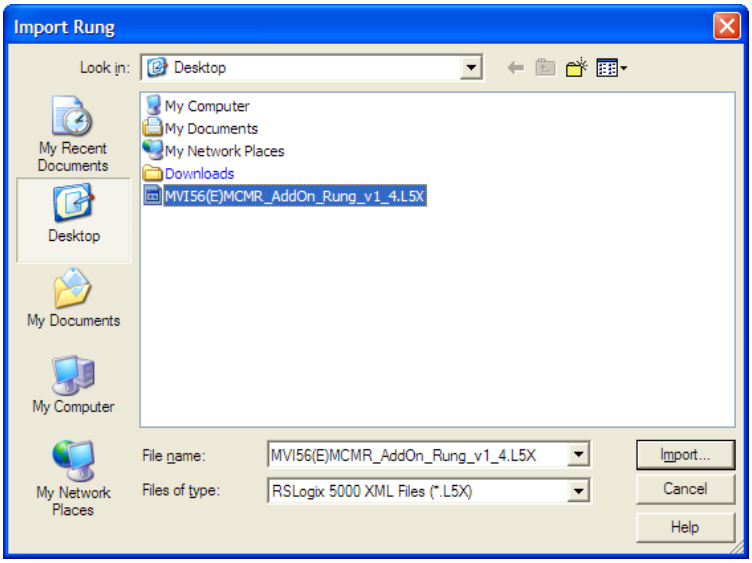
11 In the **CONTROLLER ORGANIZATION** window, expand the **TASKS** folder and subfolder until you reach the **MAINPROGRAM** folder.

12 In the **MAINPROGRAM** folder, double-click to open the **MAINROUTINE** ladder.

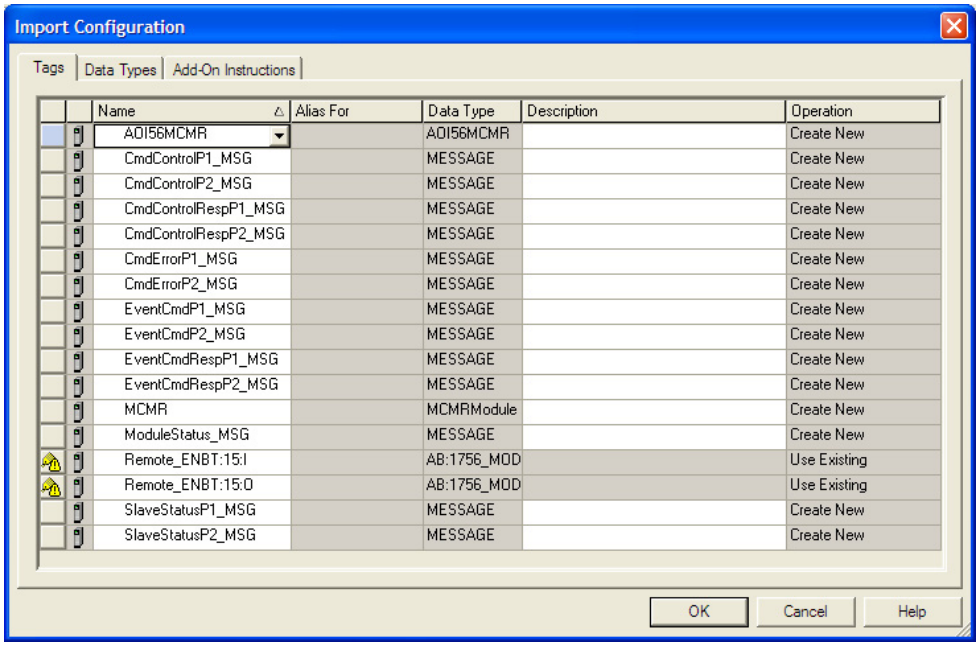
13 Select an empty rung in the new routine, and then click the right mouse button to open a shortcut menu. On the shortcut menu, choose **IMPORT RUNG…**



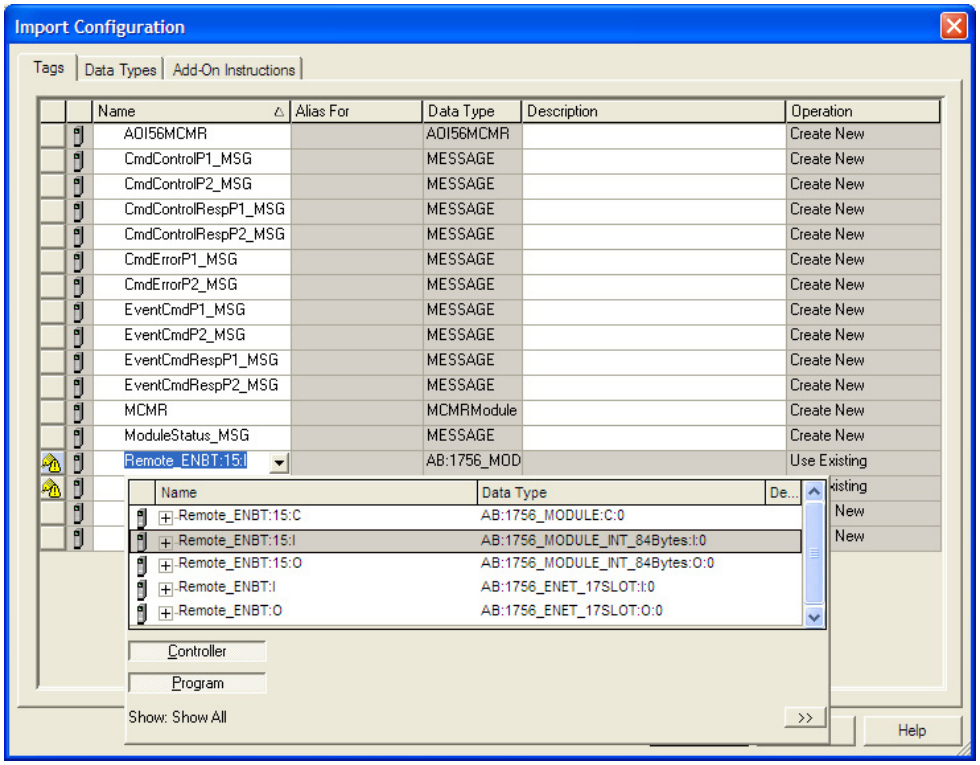
14 Navigate to the location on your PC where you saved the Add-On Instruction (for example, "My Documents" or "Desktop"). Select the **MVI56(E)MODBUS RTU/ASCII SERIAL_ADDON_RUNG_<VERSION #>.L5X** file



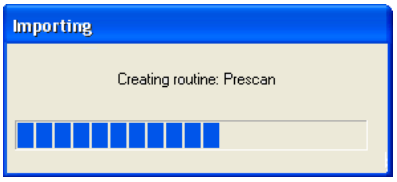
This action opens the **IMPORT CONFIGURATION** dialog box, showing the controller tags that will be created.



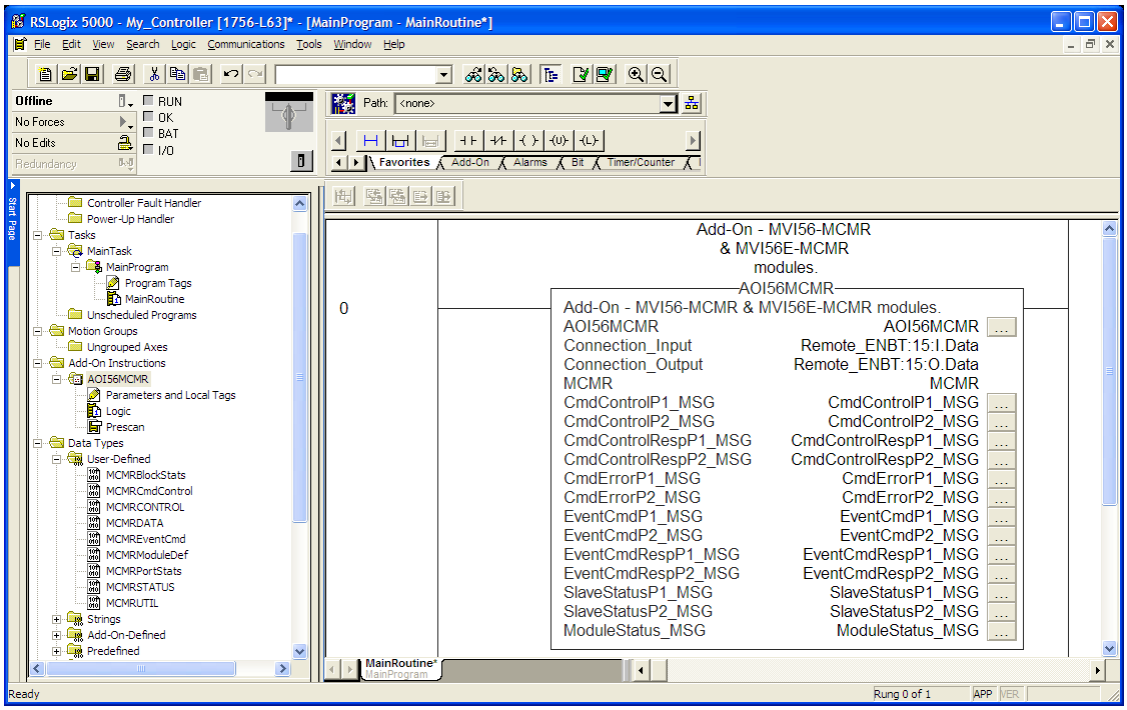
15 If you are using the module in a different slot (or remote rack), select the correct connection input and output variables that define the path to the module. If your module is located in Slot 1 of the local rack, this step is not required.



16 Click **OK** to confirm the import. RSLogix will indicate that the import is in progress:



When the import is completed, the new rung with the Add-On Instruction will be visible as shown in the following illustration.



The procedure has also imported new User Defined Data Types, Controller Tags, and the Add-On instruction for your project.

17 Save the application and then download the sample ladder logic into the processor.

Benefits

This process for importing the MVI56(E)-MCMR Add-On Instruction into the RSLogix ladder logic file has replaced the practice of importing User Defined Data Types and multiple rungs of ladder in multiple ladder files.

This enhancement allows you to easily integrate the module into a new or existing RSLogix project without manually copying over each file. Doing so practically eliminates human typographical errors. Additionally, errors that do occur are significantly easier to correct.