



**Real Time Automation, Inc.**

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## **435NBX/490NBX AOI**

### **Setting up an Allen-Bradley PLC to work with the AOI's provided by Real Time Automation, Inc. for the 435NBX and 490NBX products**

The below instructions will walk you through the setup process of the AOI in RSLogix5000 to make the integration of 435NBX or 490NBX easier in the PLC than ever before. Please follow the below instructions and if you have any questions, please call us at 262-436-9299.

1. Setting up RSLogix Data Types, AOI's, and Tags
  - a. Open RSLogix5000
  - b. Open the Program that will be used for communication to the Real Time Automation, Inc. 435NBX / 490NBX gateway
  - c. Import the Data Types
    - i. Strings
      1. Under the "Controller Organizer" (left hand side of RSLogix 5000), expand the "Data Types" folder
      2. Right Click on the "Strings" folder and select "Import String Type..."
      3. Select the "RTA\_STRING\_4096.L5X" file
      4. Click Import
      5. Import Screen Pops Up and Select OK
    - ii. User-Defined
      1. Under the "Controller Organizer" (left hand side of RSLogix 5000), expand the "Data Types" folder
      2. Right Click on the "User-Defined" folder and select "Import Data Type..."
      3. Select the "RTA\_435NBX\_490NBX.L5X" file
      4. Click Import
      5. Import Screen Pops Up and Select OK
  - d. Import the Add-On Instructions
    - i. AOI Gateway to PLC
      1. Under the "Controller Organizer" (left hand side of RSLogix 5000), Right Click on the "Add-On Instructions" folder and select "Import Add-On Instruction..."
      2. Select the "RTA\_435NBX\_490NBX\_Gateway\_to\_PLC.L5X"
      3. Click Import
      4. Import Screen Pops Up and Select OK
    - ii. AOI PLC to Gateway
      1. Under the "Controller Organizer" (left hand side of RSLogix 5000), Right Click on the "Add-On Instructions" folder and select "Import Add-On Instruction..."
      2. Select the "RTA\_435NBX\_490NBX\_PLC\_to\_Gateway.L5X"
      3. Click Import
      4. Import Screen Pops Up and Select OK
    - iii. AOI Heartbeat
      1. Under the "Controller Organizer" (left hand side of RSLogix 5000), Right Click on the "Add-On Instructions" folder and select "Import Add-On Instruction..."
      2. Select the "RTA\_435NBX\_490NBX\_Heartbeat.L5X"

3. Click Import
4. Import Screen Pops Up and Select OK
- e. Import Controller Scope Tags
  - i. In the topmost tool bar, Select “Tools”
  - ii. Select “Import”
  - iii. Select “Tags and Logic Comments...”
  - iv. Select “Sample-Controller-Tags.CSV”
2. Calling an Add-On Instruction
  - a. Provided is a Sample Main Routine (MainRoutine.L5X) which will show how to call an Add-On Instruction
  - b. If you have Imported the Controller Scope Tags, above 1.e, then the AOI Tags are already set up for you, if not, then please follow the below instructions to do so.
    - i. Under the “Controller Organizer” (left hand side of RSLogix 5000), expand the “Controller <Program Name>” folder.
    - ii. Double Click on the “Controller Tags”
    - iii. Go to the “Edit Tags” tab on the bottom of the now opened window
    - iv. Create a Tag with a Name of your choosing
    - v. Data Type of that Tag must be one of the above mentioned AOI’s  
(RTA\_435NBX\_490NBX\_Gateway\_to\_PLC, RTA\_435NBX\_490NBX\_PLC\_to\_Gateway, or RTA\_435NBX\_490NBX\_Heartbeat)
  - c. In the Ladder Logic that you want to call the AOI from, create an instruction with the following
    - i. Instruction Name to select: RTA\_435NBX\_490NBX\_Gateway\_to\_PLC, RTA\_435NBX\_490NBX\_PLC\_to\_Gateway, or RTA\_435NBX\_490NBX\_Heartbeat
    - ii. First Argument is the Tag you set up in 2.b (specific based on the AOI being used)
    - iii. Second Argument is the Input Tag (defined as DataIn)
      1. For the RTA\_435NBX\_490NBX\_Gateway\_to\_PLC AOI, this is the Controller Scope Tag that the Gateway is updating (this is the Tag defined in the ASCII to PLC direction of the Gateway)
      2. For the RTA\_435NBX\_490NBX\_PLC\_to\_Gateway AOI, this is the Controller Scope Tag that contains the ASCII data to be sent to the ASCII device (this is NOT the Tag defined in the PLC to ASCII direction of the Gateway)
      3. For the RTA\_435NBX\_490NBX\_Heartbeat AOI, this is the Controller Scope Tag that the Gateway is updating (this is the Tag defined in the PLC Configuration of the Gateway)
    - iv. Third Argument is the Output Tag (defined as DataOut)
      1. For the RTA\_435NBX\_490NBX\_Gateway\_to\_PLC AOI, this is the Controller Scope Tag that the AOI is updating for the PLC to process the data (this is NOT the Tag defined in the PLC to ASCII direction of the Gateway)
      2. For the RTA\_435NBX\_490NBX\_PLC\_to\_Gateway AOI, this is the Controller Scope Tag that the PLC is updating (this is the Tag defined in the PLC to ASCII direction of the Gateway)
      3. For the RTA\_435NBX\_490NBX\_Heartbeat AOI, this is the Controller Scope Tag that the AOI is updating to let the PLC know that the Gateway is actively communicating to the PLC