

## Application Note #1153: Manually Adding Native Tag Data Types

### Introduction

This document expands on information provided in the Pro-face Rockwell Automation Ethernet/IP Driver Manual. Please read section 5.5 “Control/Compact/Flex Logix Series Native first.

**Prerequisite:** Minimum version of GP-Pro EX v2.71 and Rockwell Automation Ethernet/IP Driver v1.19.21. If your software does not meet these minimum requirements please upgrade. The driver and manual is available at:  
<http://www.hmisource.com/otasuke/download/exdriver/plc/rock.htm>

Note: *If you have an existing project that is GP-Pro EX v2.1 or earlier please contact Pro-face America technical support to upgrade your project.*

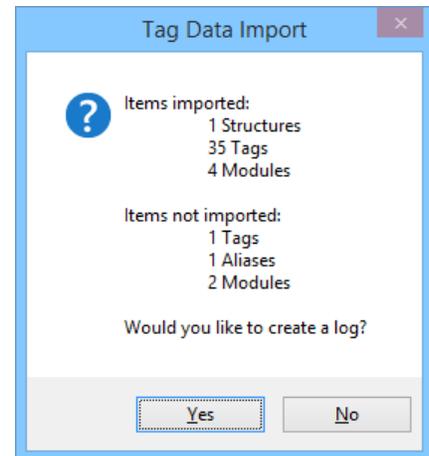
**“Import File is from a higher RSLogix version than tested. New data types or tags may not be supported by import utility. Do you want to continue?”** Click [Yes]. When importing your .L5K file the following caution message may appear. In functional tests at Pro-face America and as of February 2016 no issues have been reported by customers using Rockwell Automation Studio 5000 Logix Designer\* through v28.

### “Items not imported:... Would you like to create a log?”

After importing the native tag data into GP-Pro EX this message may appear: If an item does not import it is because the import tool is not able to generate the item’s Data Type or Structure.

These types of items may fail to import:

- I/O Modules not supported by the import tool.
- Alias tags linked to base tags that did not import.
- User Defined data types that include an element of a data type not pre-defined in the import tool.
- Add-on-Defined data types if the Add-On Instruction is sealed or the parameters include an element of a data type not pre-defined in the import tool.



*\*All references to Studio 5000 Logix Designer in this document also refer to RSLogix 5000 v15 and greater.*

### Review the Log

To obtain a list of items not imported respond [Yes] to the question: “Would you like to create a log?” Using the dialog box displayed, set the name and the location of the log file to be saved. To review the list of items that did not import open the log file with a text editor such as Windows Notepad. Simply ignore any item on the list that is not needed for your GP-Pro EX project.

Look in the section “Tags not imported” for tags you want to use in the GP-Pro EX project. A tag does not import if the tool was not able to create the data type. The name of that data type is after the dash following the tag name. In the log example to the right a “Controller Scope” tag “TAG\_AOD\_Sample” did not import. The name of the data type follows the tag name. The data type “AOD\_Parameters” did not import.

Look in the section “Alias not Imported” for alias tags you want to use in the GP-Pro EX project. An alias cannot import if its base tag did not import. The base tag is listed after the word “to” following the alias name. In the example the alias “TAG\_Encoder\_Position” did not import because the base tag “Encoder:I.Position”, a module tag, did not import.

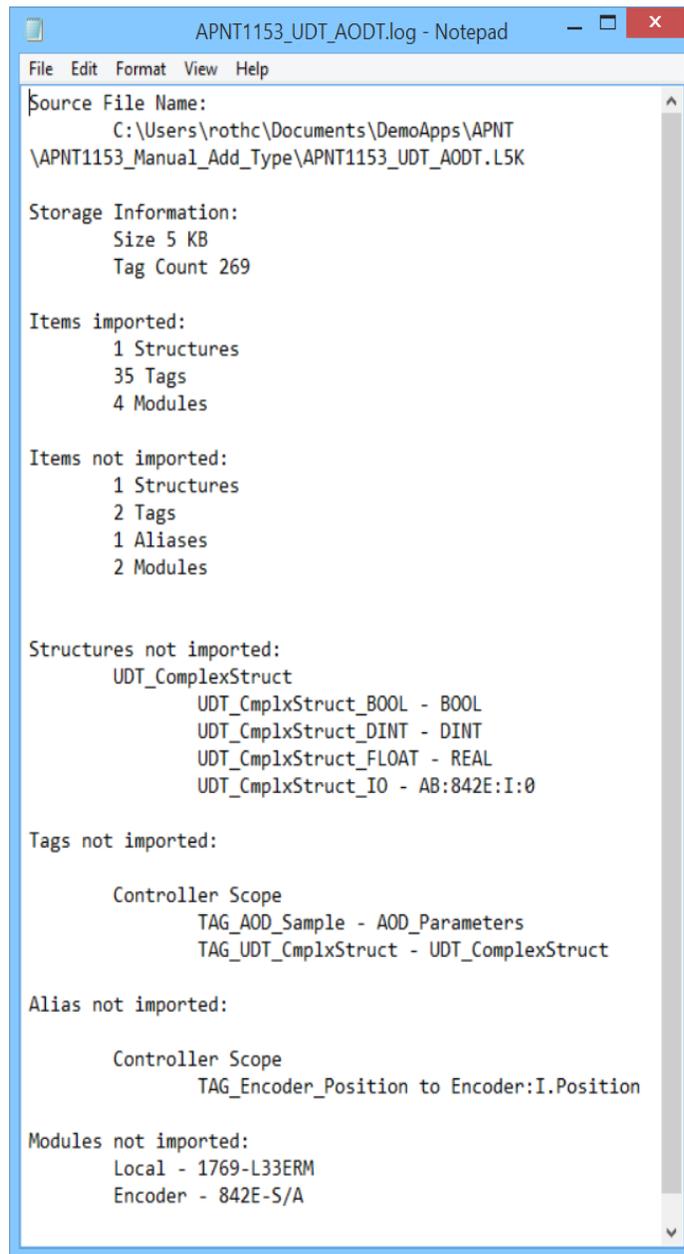
Look at the section “Modules not imported”. If a module did not import its tags are neither imported or included in the log. Look in the section “Modules not imported” for modules you want to access in your GP-Pro EX project. In the example the first item is a PLC which has no tags. The second item “Encoder - 842E-S/A” needs to be manually added because it includes a base tag for the alias tag that did not import.

## Adding I/O Modules

If your GP-Pro EX project requires I/O module tags (or alias to them) that failed to import the module may be supported in a more recent version of the GP-Pro EX Rockwell Automation Ethernet/IP driver. The list of officially supported modules can be found in the driver manual. Some modules similar to officially supported modules do import. If a module does not import this section explains how to add it manually.

*Note: If you do not have GP-Pro EX Rockwell Automation Ethernet/IP Driver v1.19.20 please upgrade. Problems that may be encountered with some supported modules are fixed. Support for additional modules and PLCs was added.*

To add a module Base Tag first define its Data Type / Structure. Then create the Base Tag. After the module Data Type(s) and Base Tag(s) are defined, alias tags and other tags requiring

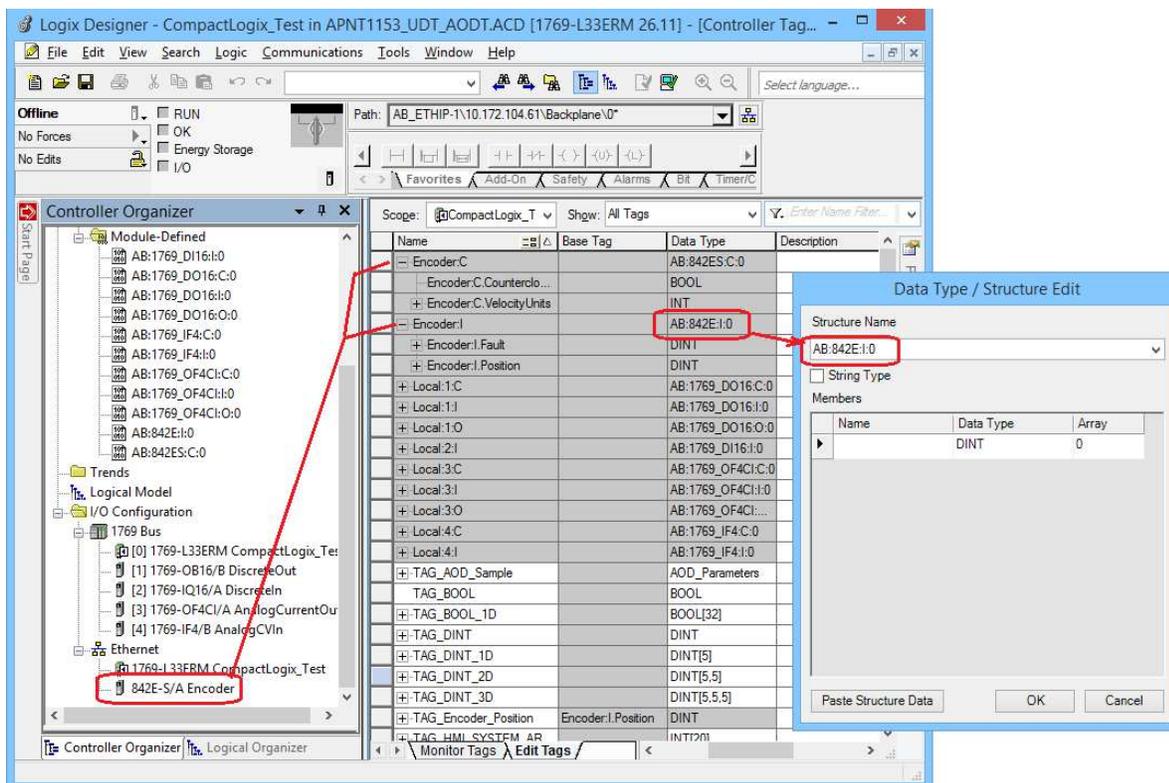


those items will import. Most modules include more than one tag and data type/structure. Simply ignore any tag or structure not needed for your GP-Pro EX project.

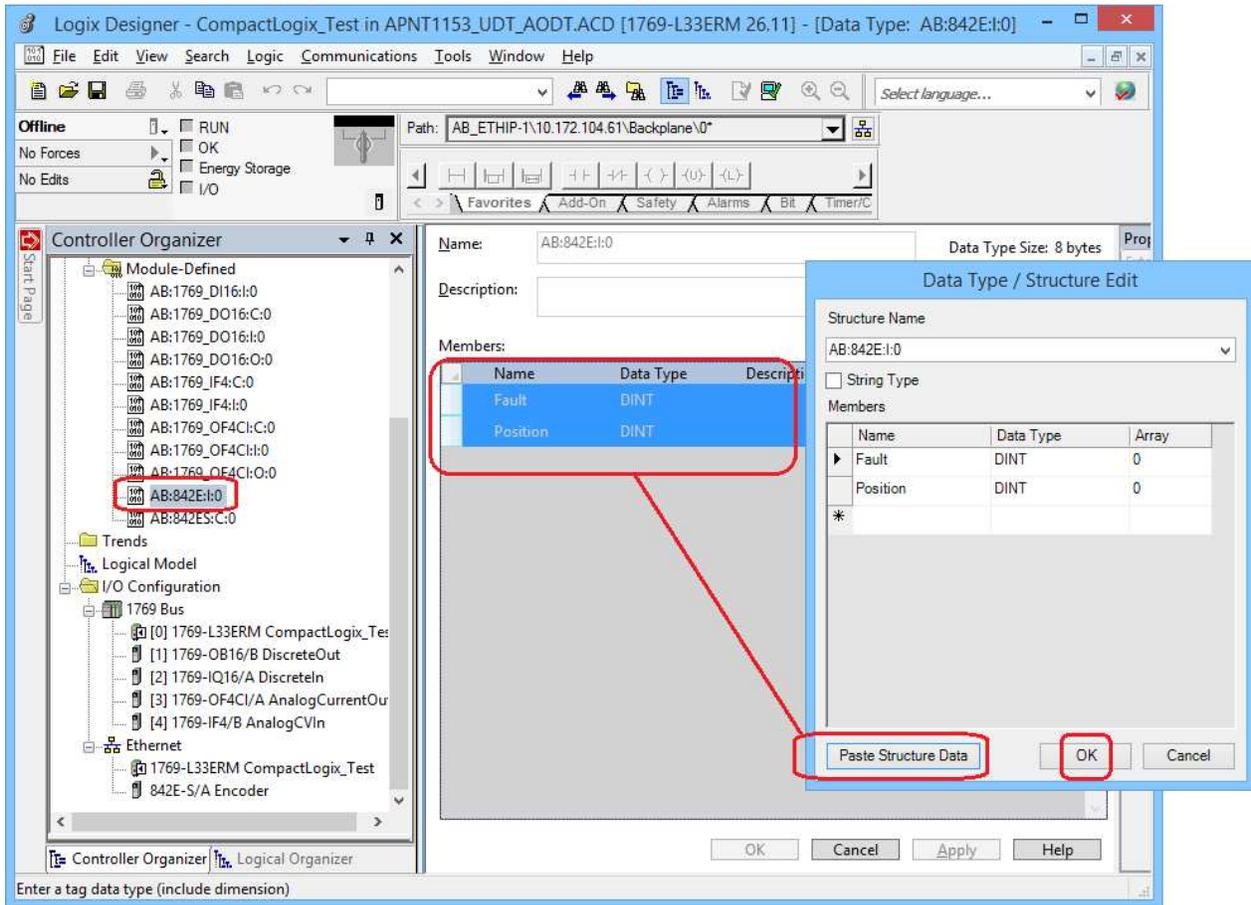
## Defining a Module Data Type / Structure

In GP-Pro Ex in the Individual Device Settings dialog box click [Edit]. Then for Edit Mode select Data Type / Structure. Repeat the following steps for each unsupported module data type/structure you want to add:

1. In Logix Designer find the module tag. Note its Data Type. With your mouse button pressed swipe across the name of the data type to highlight it, and copy it [Ctrl] C.
2. In GP-Pro EX in the “Data Type / Structure” dialog box click [Add] to open a “Data Type / Structure Edit” dialog box.
3. Click in the Structure Name field and press [Ctrl] V to enter the name of the data type.



4. In Logix Designer locate the Data Type in the explorer window under Data Types / Module-Defined and double click on it to open the properties window.
5. In Logix Designer select the entire Members table by clicking on the upper left hand corner. Press [Ctrl] C to copy the structure data.
6. In GP-Pro EX click on [Paste Structure Data]. Press [OK]

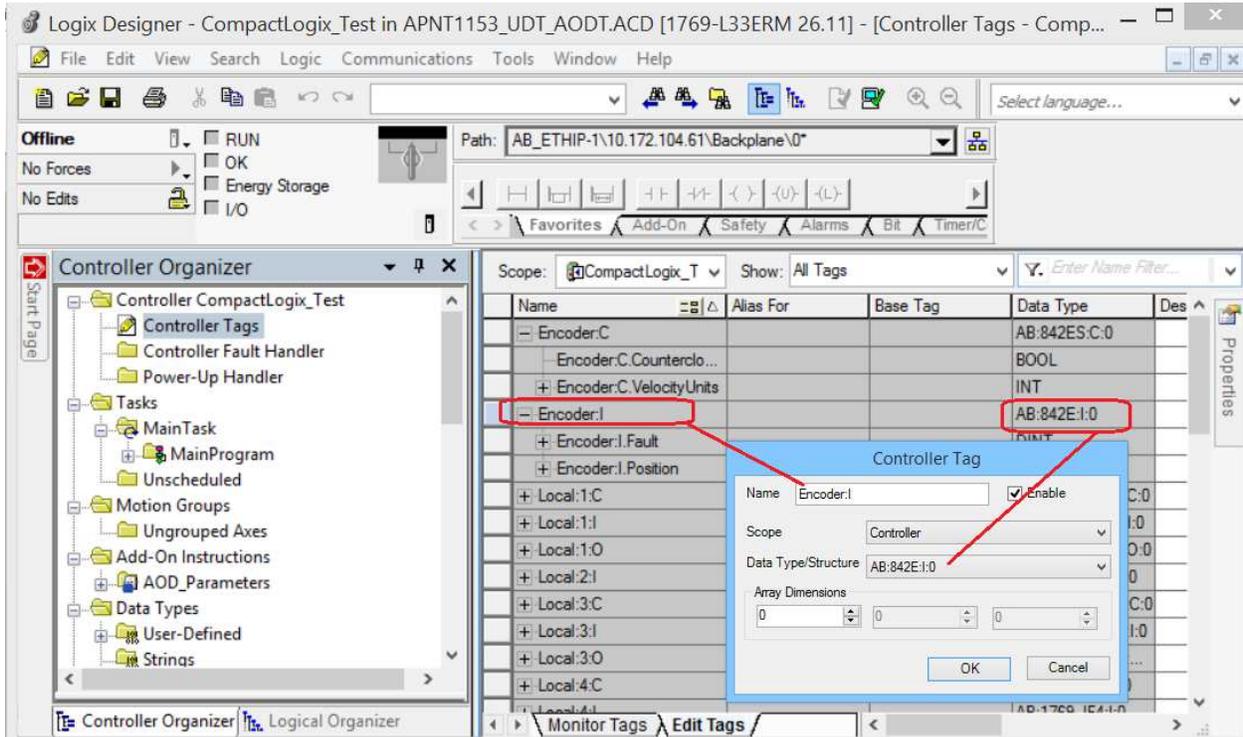


Once a module Data Type / Structure is manually defined the module base tag(s) are added manually.

### Adding a Module Base Tag

Module Tags will not import even after their data type is defined. Each must be manually entered. In GP-Pro EX select Edit Mode: Tag/Alias. Repeat the following steps for each module base tag you wish to add:

1. Click [Add] to open the controller Tag dialog box.
2. In Logix Designer locate the tag, highlight the Name and press [Ctrl] C.
3. In GP-Pro EX click in the Name field and press [Ctrl] V.
4. Click the Data Type / Structure scroll arrow and find the correct Data Type.
5. Click OK



After the module Data Type(s) and Base Tag(s) are defined any Alias and other Tags of data types requiring those items can be imported. For instructions see the Section: “Importing Additional items”.

## User Defined Data Types

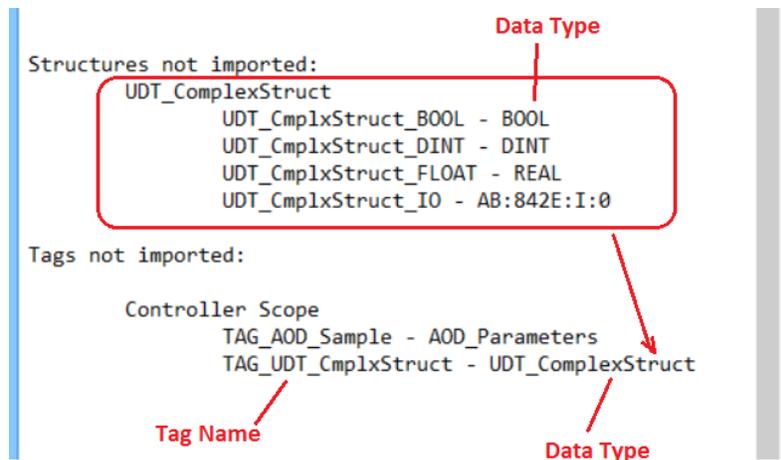
When a new native tag database is created in GP-Pro EX only the basic Data Types/Structures are included. Although they are not visible at this point many Logix Designer Predefined Data Types in are supported in GP-Pro EX. They simply appear in the GP-Pro EX project tag database when a tag of that data type is imported.

A Tag fails to import into GP-Pro EX if its data type / structure is not predefined and the import utility is not able to generate the data type / structure from the import data. This section explains how to locate the specific item within a data type / structure that does not import. Then add it, or simply ignore it and create the Data Type.

The first step is to identify the items or structure members that the import utility is unable to create. Look at the log section “Tags not imported:” to find the data type / structure. It follows a dash “-” after the tag name.

In our example the tag “TAG\_UDT\_CmplxStruct” did not import. The data type / structure name “UDT\_ComplexStruct” follows the dash. Next look under “Structures not imported:” for the same data type / structure. If it is not in the list it may be an Add-On-Defined data type. If it is in that list one or more of its structure members failed to import. Defining that member will make it possible to import the structure.

For example refer to this section of the log:



Each member of the structure is shown along with its Data Type. Find the members that are of a data type / structure not included in the GP-Pro EX project. Example:

- These members are predefined data types “UDT\_CmplxStruct\_BOOL” is data type BOOL, “UDT\_CmplxStruct\_DINT” is data type “DINT”. UDT\_CmplxStruct\_FLOAT” is data type “REAL”.
- However “UDT\_CmplxStruct\_IO - AB:842E:I:0” is module data type that did not import. This data type / structure is not included in the GP-Pro EX project and must be created.

### Follow these steps to find an item that does not import in your project:

1. Find a member Data Type /Structure not included in the GP-Pro EX project that is not a predefined data type. Refer to that data type in the following steps.
2. If the member of the structure will not be used in the GP-Pro EX project the data type / structure can be added manually without including that member. See the instructions below “Adding a Data Type / Structure”.
3. Check if the data type is another structure in the log file under “Structures not imported:” If so return to step 1 referring to that structure.
4. Look in Logix Designer folder Data Types / User-Defined for that data type. If the member is a User-Defined Data Type return to step 1 referring to that structure. (This process may go several layers deep in User Defined Data Types until the item that does not import is found.)
5. Look in Logix Designer folder Data Types / Module-Defined. If it is a Module-Defined data type go to Section 1 – Manually Adding a Module.
6. Look in Logix Designer folder Data Types / Add-On-Defined. Add-on-Instruction Data Types that have members with a Usage value of "InOut" will not import. Some protected Add-On-Defined data type / structures also might not import. See the instructions below for adding a Data Type / Structure.

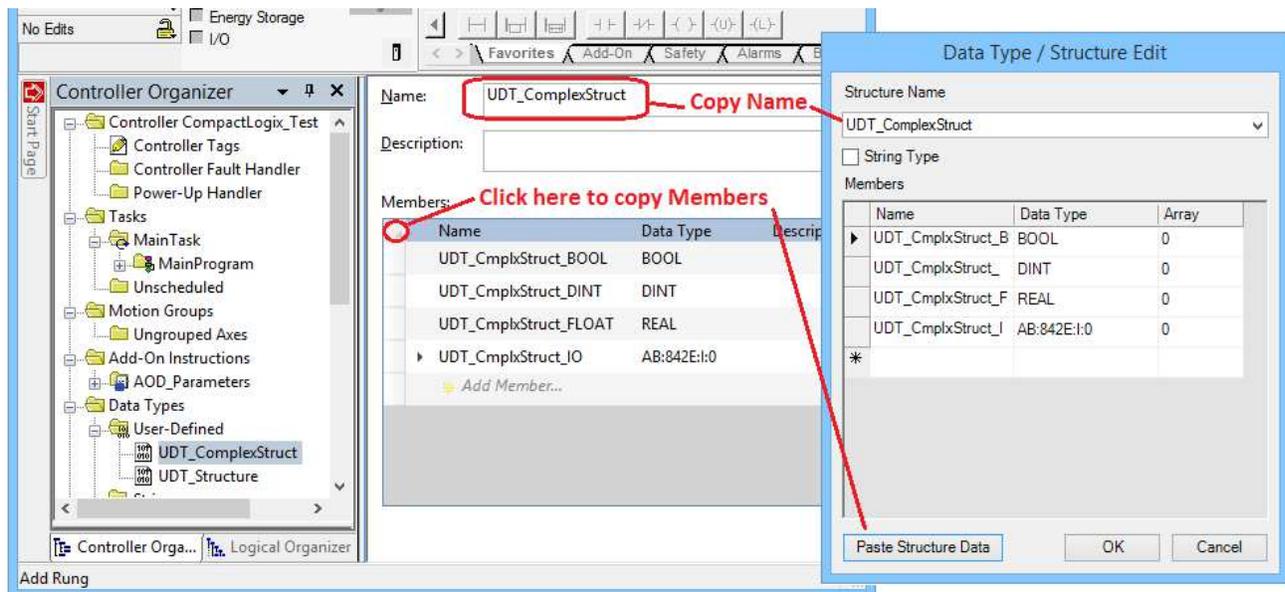
*Note: Add-On-Defined Data Types differ from other Data Types in that they are Add-On-Instruction parameters. Typically the parameters are accessed by PLC routines, not an operator interface.*

## Adding a Data Type / Structure

This section applies to all Data/Type Structures except Module Defined. Data Types, including Add-On-Defined, can be manually entered or copied from Logix Designer (RS Logix 5000).

### Adding User-Defined Data types

1. In the GP-Pro EX Data Type / Structure List tab click on [Add].
2. In Logix Designer click on the data type in the list of user-Defined Data Types to open it.
3. In the instruction definition area, highlight the Name. Press [Ctrl] C.
4. In GP-Pro EX click on the Structure Name field and press [Ctrl] V to paste the Data Type name.



5. Select the entire Members table by clicking on the upper left corner. Press [Ctrl] C.
6. In GP-Pro click on [Paste Structure Data].
7. If the list of members includes an extra line delete it.
8. If the message “There are unsupported data types. Data will be set to DINT.” appears a member data type is not yet defined in the project; either the Data Type must be added first or that member must be deleted.

*Note: If the member of a Data Type / Structure is not needed in a project and its Data Type does not import it can simply be deleted.*

9. Click [OK]. If you get an error “Found a sub-entry with invalid name:” delete the extra line.

Once a Data Type / Structure is defined other Data Types that have a structure member of that type along with tags and aliases of those other Data Types, will import. For instructions see the Section: “Importing Additional Items”.

## Adding Add-On-Defined Data Types

Add-On-Defined data types differ from other data types in that their members are Add-On-Instruction parameters. Typically the parameters are accessed by PLC routines, not an operator interface. If the Add-On Instruction is protected it may not be possible to copy the parameters from Logix Designer into GP-Pro EX. They may need to be created piecemeal.

1. In the GP-Pro EX Data Type / Structure List tab click on [Add].
2. In Logix Designer select Controller Tags. Find a tag that is the Add-On-Defined data type. With your mouse button pressed swipe across the name of the data type to highlight it, and press [Ctrl] C.

*Note: In older versions of RSLogix 5000 you may be able to select the name in the Add-On Properties dialog box.*

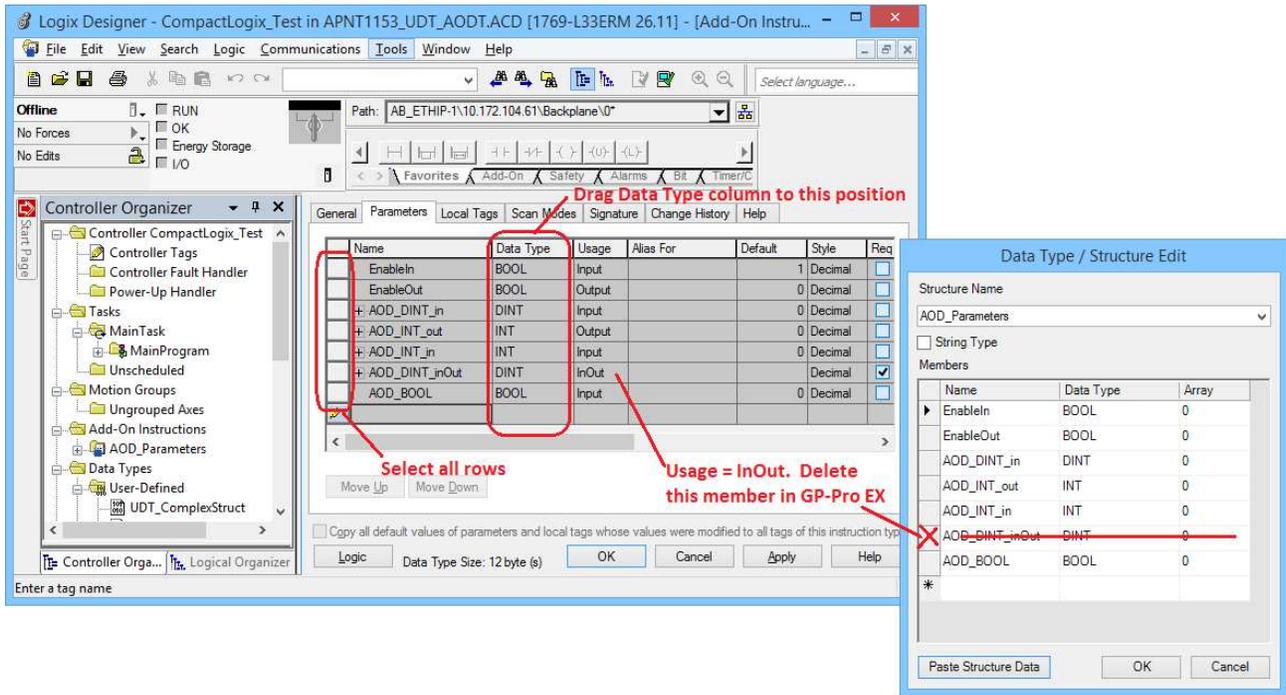
3. In GP-Pro EX click on the Structure Name field and press [Ctrl] V to paste the Data Type name.

*Note: If you were not successful in copying the name you can type it in. Include all punctuation exactly as it appears in Logix Designer.*

4. In Logix Designer in Data Types / Add-On-Defined click on the data type to open the properties box.
5. If the Data Type Column is not immediately right of the Name column grab it and drag it there.
6. Select the members. Select the first row of the Parameters table by clicking on the button left of the first parameter Name. Select the remainder of the Parameters table using [Shift]-click while hovering over the button left of the last parameter. Press [Ctrl] C.

*Note: If it is not possible to copy the data using this method it may be protected by the author of the Add-On-Instruction. In that case manually entering the data into the structure in GP-Pro EX or piecemeal copying member names is possible. The member names are a portion of the tag names.*

7. In GP-Pro click on [Paste Structure Data].
8. If the list of members includes an extra line delete it.
9. If the message “There are unsupported data types. Data will be set to DINT.” appears a data type is not yet defined in the project; either the Data Type must be added first or that member must be deleted



Note: If the member of a Data Type / Structure is not needed in a project and its Data Type does not import it can simply be deleted.

10. Click [OK]. If you get an error "Found a sub-entry with invalid name:" delete the extra line.

Once a Data Type / Structure is defined other Data Types that have a structure member of that type along with tags and aliases of those other Data Types, will import. For instructions see the Section: "Importing Additional Items".

## Importing Additional Items

After adding structures or module defined tags that did not previously import, other items that needed them for their definition will import. To import these additional items:

In the Controller Tag List dialog box verify the PLC Version selected is correct.

1. Click on [Import].
2. Select the Import L5K
3. Choose Import All or Import New Only
4. Choose Controller Scope Only or include Program Scope Tags.
5. Click on [Open]
6. If "Items not imported" appears create a log to verify the results.

If some of the items did not import review the log and return to the appropriate step above.

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For technical support email: [support@profaceamerica.com](mailto:support@profaceamerica.com) or call: 800.289.9266.  
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