How To Resolve Potential Issues Importing Ethernet IP Data Types For Use With Add On Instructions Into RSLogix5000 or Studio5000

This article demonstrates potential issues seen when users attempt to import the data types that the AOIs are codependent on and how to resolve them.

This applies to the use of the AKD-P Ethernet IP motion tasking drive (AKD-P-NxEI) and the use of Allen Bradley Compactlogix or Contrologix PLCs in the RSLogix5000 or Studio5000 programming environment.

I replicated an issue where a customer imported the data types (and AOIs) into an existing PLC project but when the program was compiled, the compiler reported errors.

I used Studio 5000 v31.11 to test this. The AKD Ethernet IP RSLogix Communication manual demonstrates a procedure for adding AOI capabilities into an existing project and the procedure works if you follow it rigidly in order and in detail. However the following testing demonstrates how these errors can be generated.
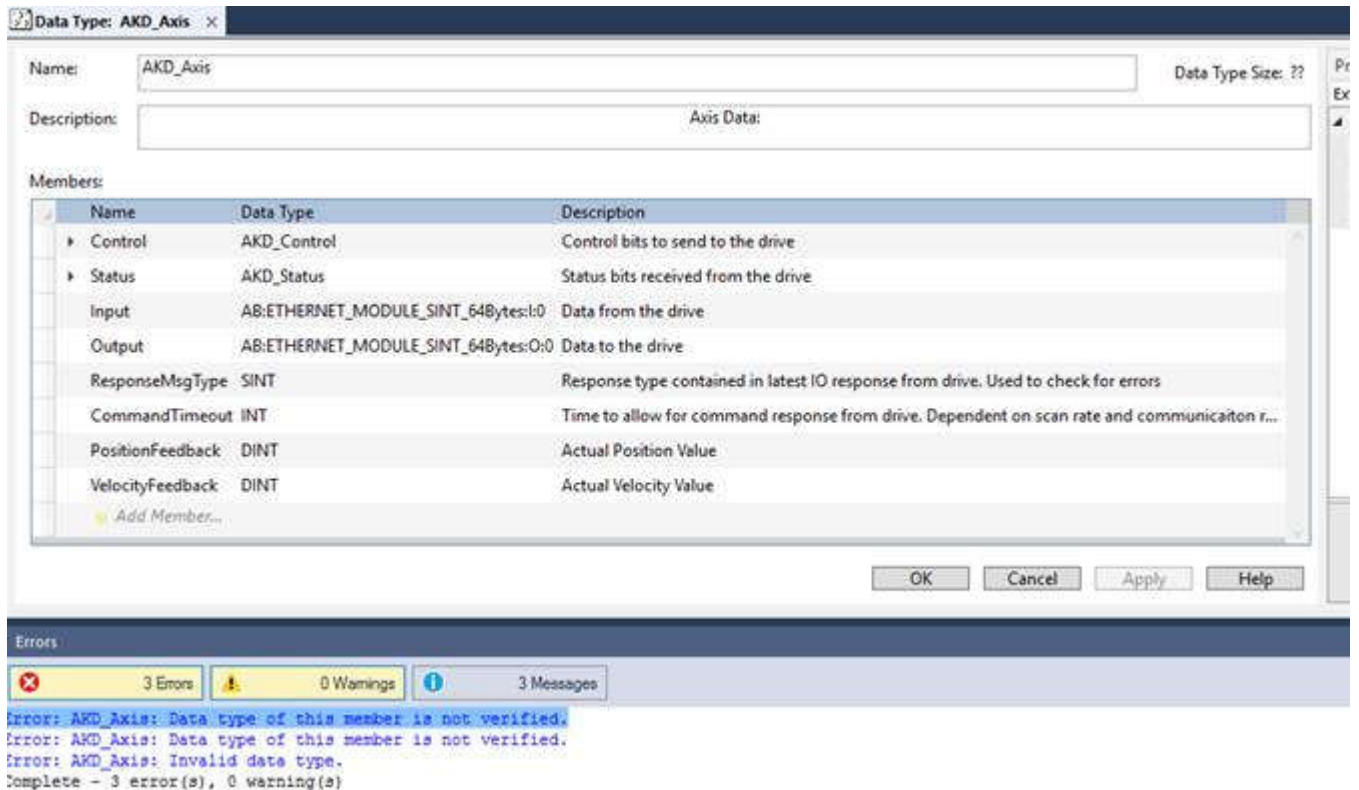
In my testing I tried 2 scenarios both of which will generate the same faults.

1. Imported the data types BEFORE declaring at least 1 Generic Ethernet Module.
   The importation of data types must be in the order as indicated in the manual.

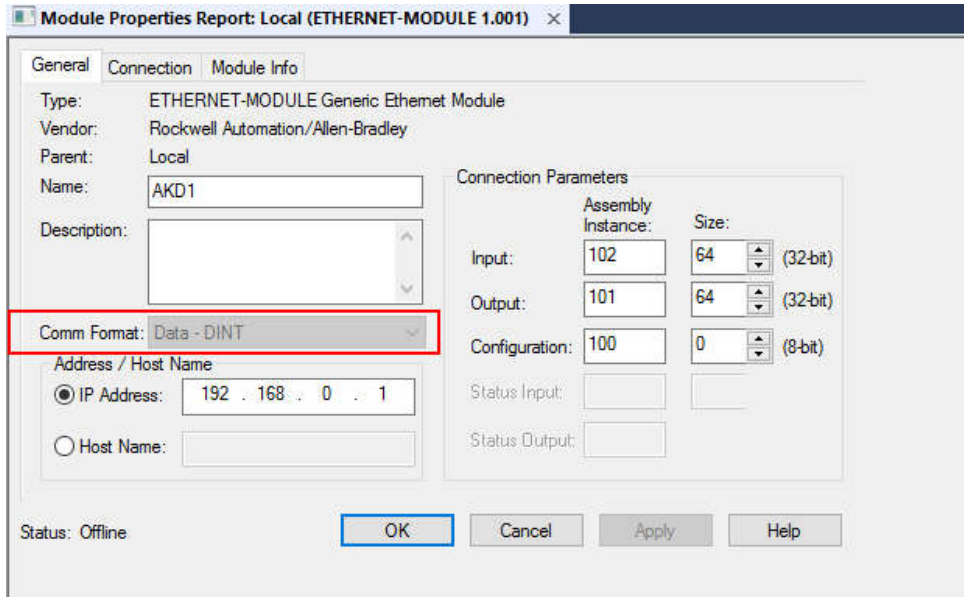| Order	File	Descrption
1	AKD_Control_UDT.L5X	Control message for sending to axis
2	AKD_Status_UDT.L5X	Status message for updating from axis
3	AKD_Axis_UDT.L5X	Axis definition
4	Motion_Task_UDT.L5X	Motion Task data table structure

2. Declared the Generic Ethernet Module but left the COMM Format the default Data-DINT (this is easily overlooked).

The errors are reported as "AKD_Axis: Data type of this member is not verified (twice) and AKD_Axis: Invalid Data Type. This appears to point to the Input and Output members with a data type AB:ETHERNET_MODULE_SINT as seen below.

Data Type: AKD_Axis ×

| Name: | AKD_Axis | | Data Type Size: ?? |
| Description: | | Axis Data: | |

Members:

Name	Data Type	Description
▶ Control	AKD_Control	Control bits to send to the drive
▶ Status	AKD_Status	Status bits received from the drive
Input	AB:ETHERNET_MODULE_SINT_64Bytes:I:0	Data from the drive
Output	AB:ETHERNET_MODULE_SINT_64Bytes:O:0	Data to the drive
ResponseMsgType	SINT	Response type contained in latest IO response from drive. Used to check for errors
CommandTimeout	INT	Time to allow for command response from drive. Dependent on scan rate and communicaiton r...
PositionFeedback	DINT	Actual Position Value
VelocityFeedback	DINT	Actual Velocity Value
Add Member...		

OK   Cancel   Apply   Help

Errors

❌ 3 Errors   ⚠ 0 Warnings   ℹ 3 Messages

```
Error: AKD_Axis: Data type of this member is not verified.
Error: AKD_Axis: Data type of this member is not verified.
Error: AKD_Axis: Invalid data type.
Complete - 3 error(s), 0 warning(s)
```
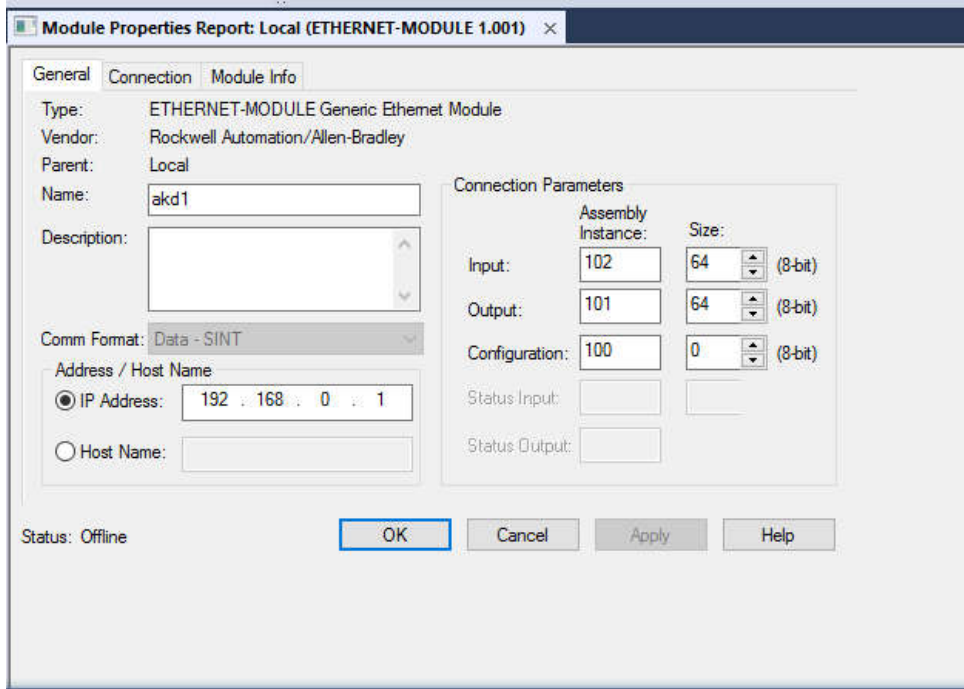
After declaring at least one Generic Ethernet Module under Ethernet in my project tree I tried to compile again but with the same errors.

The Comm Format defaults to Data-DINT but is wrong for the AKD EIP Comms. It must be Data-SINT per our manual. It appears once declared you can't edit the Comm Format (unfriendly) so I deleted the Generic Ethernet Module and added a new one with the correction.

Correction using Comm Format Data-SINT (and no compile errors):