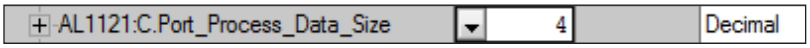
How to change AL11xx/AL12xx EIP data sizes

When the data size of the IO-Link master changes, the data size changes for all IO-Link ports. Making this functional with the AOI requires more than just changing the configuration size value. This procedure must be done in offline mode.

The default is 32 bytes for each port and is represented in the configuration as a “4”.



Simply making a change to 0, 1, 2 or 3 (1, 4, 8, or 16 bytes) does not change the array length pulled into the PLC. For this change to take effect, modifications must be made to the module definition and to all of the PLC_Input tags of the AOIs.

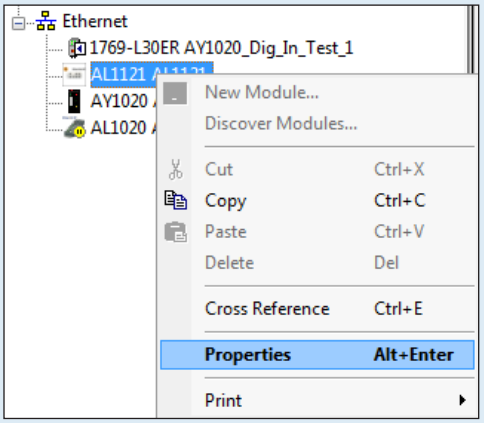
First let’s review the static input bytes of a 4 port AL11/AL12xx block.

Byte	Content
0	Digital inputs of the IO-Link ports in the DI operating mode (→ Mapping: digital input data (DI) (→ p. 71))
1	
2	Status information (→ Mapping: Status information (→ p. 72))
3	
4...45	Acyclic command area: Response channel (→ Response channel (→ p. 77))
46...63	Port X01: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 72))
64...81	Port X02: Diagnostic, vendor ID, device ID, results (→ Mapping: IO-Link port information (→ p. 72))
82...99	Port X03: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 72))
100...117	Port X04: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 72))
118	Port X01: Cyclic input data (n bytes)
118+n	Port X02: Cyclic input data (n bytes)
118+2n	Port X03: Cyclic input data (n bytes)
118+3n	Port X04: Cyclic input data (n bytes)

The location of this data never changes. This is the baseline of how to adjust the input array size in the module definition properties.

If we select data size 2 (8 bytes per port), then we have 8 x 4 or 32 bytes to add to the static 117. This gives us 149 and because the array is set for INT we need 75 words.

1. Select module properties.



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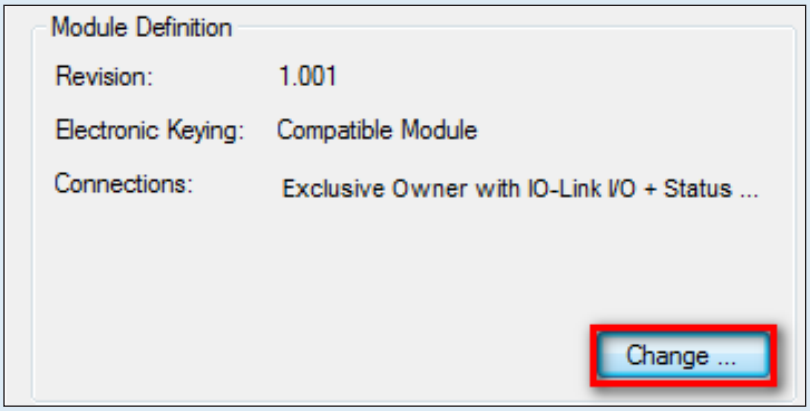
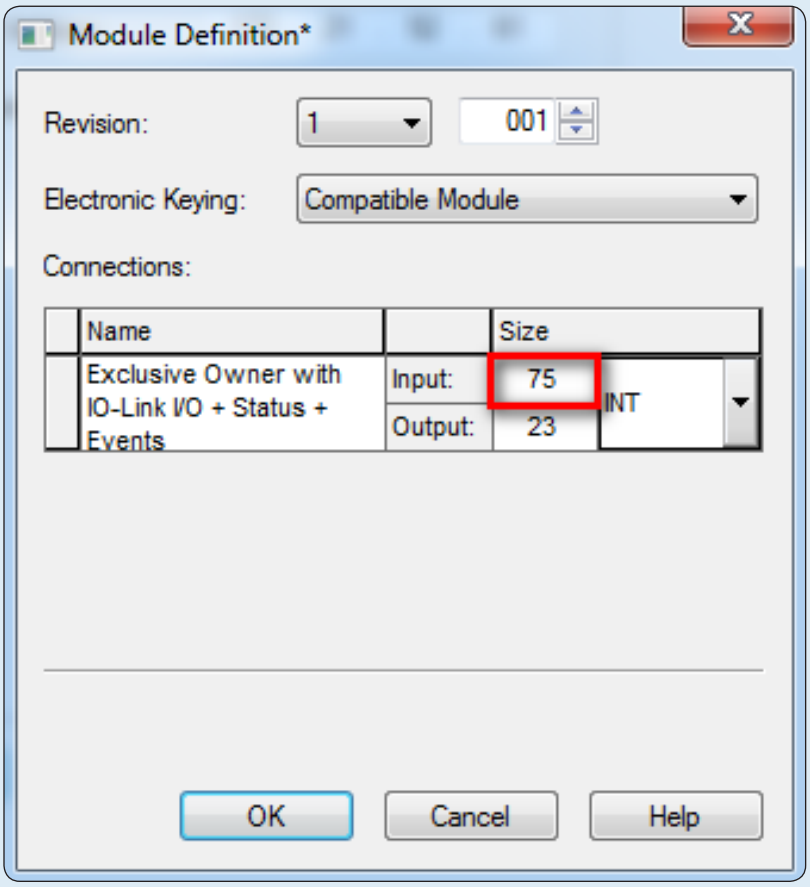
2. Select “Change…”



3. Modify the input size.



4. Select “OK” and “Apply” the changes.

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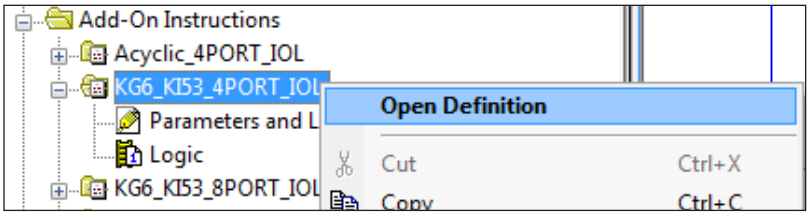
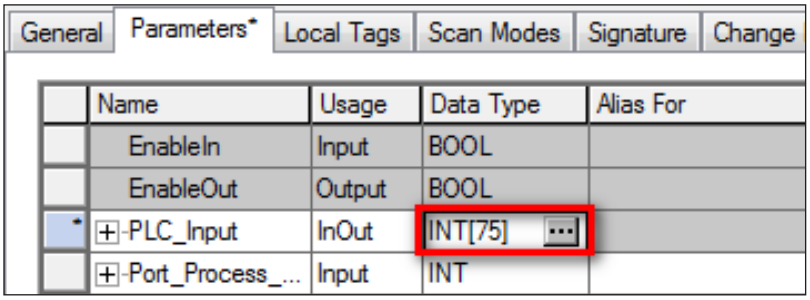
Now for a modified AOI example. We will continue using our data size 2 (8 bytes per port) and the 75 word input.

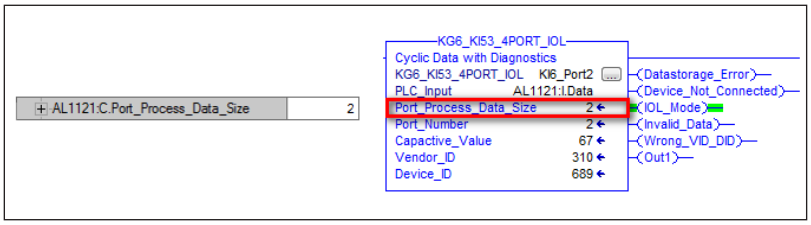
5. Right click on the AOI and select "Open Definition".



6. In the Parameters tab find the PLC_Input and change the "Data Type" to INT[75].



7. Drop in the AOI and fill it out.
   - Make sure that the Port_Process_Data_Size matches the configuration data size.



Setup for an 8-pot IO-Link block uses a similar procedure.

Byte	Content
0	Digital inputs of the IO-Link ports in the DI operating mode (→ Mapping: digital input data (DI) (→ p. 73))
1	
2	Status information (→ Mapping: Status information (→ p. 73))
3	
4...45	Acyclic command area: Response channel (→ Response channel (→ p. 79))
46...63	Port X01: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 74))
64...81	Port X02: Diagnostic, vendor ID, device ID, results (→ Mapping: IO-Link port information (→ p. 74))
82...99	Port X03: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 74))
100...117	Port X04: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 74))
118...135	Port X05: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 74))
136...153	Port X06: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 74))
154...171	Port X07: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 74))
172...189	Port X08: Diagnostic, vendor ID, device ID, events (→ Mapping: IO-Link port information (→ p. 74))
190	Port X01: Cyclic input data (n bytes)

As with the previous example, the location of this data never changes and it is the baseline.

If we select data size 2 (8 bytes per port), then we have 8 x 8 or 64 bytes to add to the static 189. This gives us 223 bytes and because the array is set for INT we need 112 words.

Go back to step 1 with our new 112 INT value and use the 8-Port AOIs.