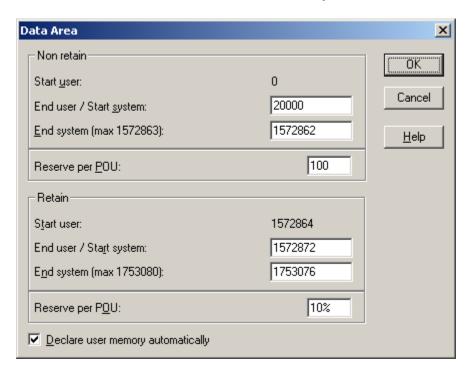
Maximum variable allocation in the IEC controllers

MP2300Siec

Both the MP2300Siec and MP2310iec controllers allow users access to the data area settings (these settings are not available on the 2600). With the default settings shown below, the user is able to define about 1516 K bytes of non retained variables.



This total non retained memory is shared by the global variables and any local variables defined within a POU.

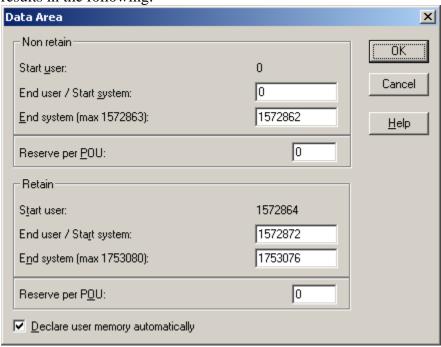
The total available memory for MP2300Siec (within 1 K) is:

1516K non retained

159K retained

Defining one more kilobyte of retained or non-retained variables will generate a compile error.

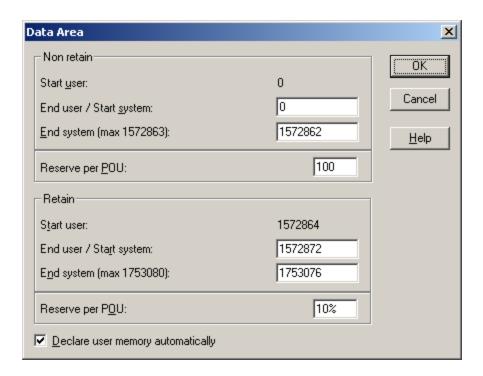
Removing the Reserve per POU values and setting the non-retained end user value to 0 results in the following:



The absolute maximum total available memory for MP2300Siec with settings above is: 1535.875K non retained 175.9766K retained

This makes sense because the total non-retained memory is 1,572,862 bytes or 1535.99 K bytes and the total retained is 1,753,076 - 1,572,864 = 180,212 bytes or 175.98 K bytes.

The Reserve per POU values have noting to do with the amount of memory available for a given POU. Setting these values only results in a lower amount of user memory available for declaring variables. The system uses the Reserve per POU values during the patch POU operation, which is not allowed on IEC controllers.

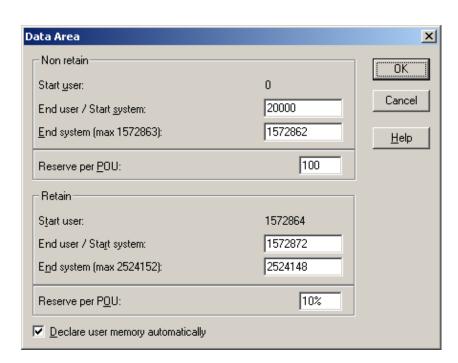


For comparison, a system with data area values as shown above and 6 POU's declared will allow the following:

Total memory:

1535.125K non retained 159.88K retained

MP2310iec



Total available memory with a default data area (shown above) is:

1516K non retained

844K retained

Defining one more kilobyte of retained or non-retained variables will generate a compile error.

MP2600

Total available memory is:

974K non retained

175K retained

Defining one more kilobyte of retained or non-retained variables will generate a compile error.

Conclusion

The data area settings exposed for the MP2300Siec and MP2310iec controllers is misleading. The reserve per POU value does not actually reserve any memory for user declared variables in the POU.

The total system memory should be thought of as a pool, and declaring any variable any where will use resources from that pool.

The values in the data area setting should not be changed if the application does not have a memory issue. Setting the "End user" non-retained value to zero and the reserve per POU values to zero results in a slightly higher (depending on the number of POU's declared) total amount of memory available for user declared variables.