

**Title:** Troubleshooting the “Exceeded data area by ‘[POU name]’” Error

**Product(s):** MotionWorks, MPiec Controllers

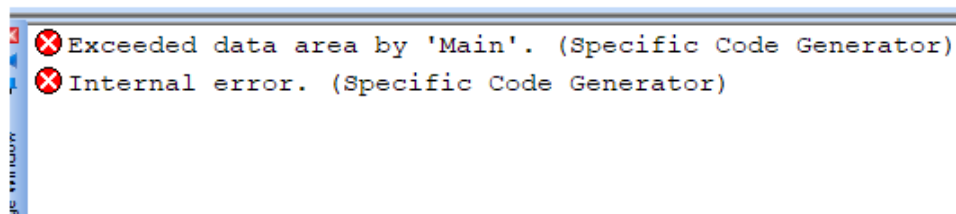
**Doc. No.** TN.MWIEC.05

## Overview

This document contains the procedure to eliminate the “Exceeded data area by ‘[POU name]’” error. From here forward, this will just be referred to as the error.

## Cause

All controllers have a defined range of memory designated for application code storage. A detailed chart of all of the controller architectures and their associated memory maps can be found by searching for Controller Memory in the Hardware Configuration help file. If a program exceeds the allowable size, then the following error will appear during compilation.



## Solution 1: Expand the data area (Only applicable for MP2300/2310iec)

Often times, the best way to solve this error is to increase the allotted size for application program memory in the controller. It should be noted that it is only possible to change the data area for MP2300iec and MP2310iec controllers. If the controller in question is not one of these two types skip this section. This can be done by pressing the “Change Default Data Area Settings” button.

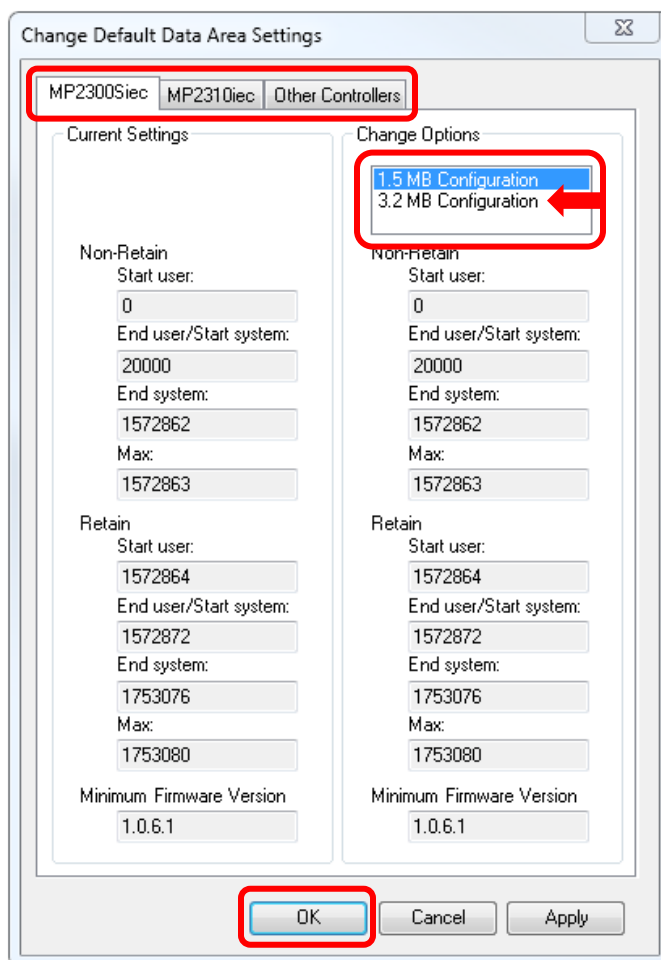


In the menu that appears, select the controller being used, and then select the 3.2 MB configuration and press OK. This will double the allocated memory for application programs within the controller. It should be noted that this is at the expense of memory used for other operations, specifically the memory used for storing cam tables, and it is possible that this will result in other errors.

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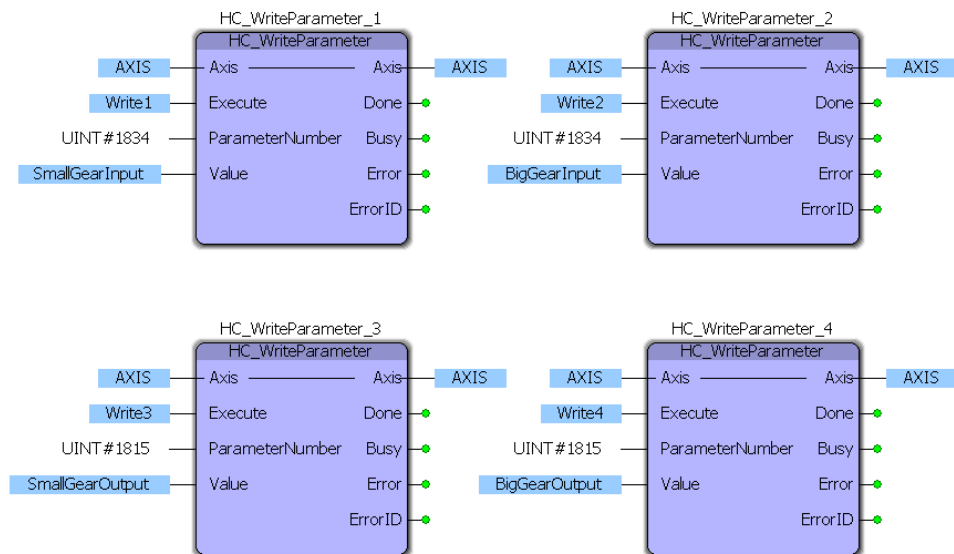
## Solution 2: Condense the application code

If after doing this, the error still persists, it may be necessary to trim down the size of the application code. Some function blocks require very large internal data structures for their specific function. Including multiple of these in your project can often occupy much more memory than is actually required to accomplish the desired task. The HC\_WriteParameter block is known to have a very large internal data structure. Below is an example where it is used multiple times to change the gear ratio on the fly.

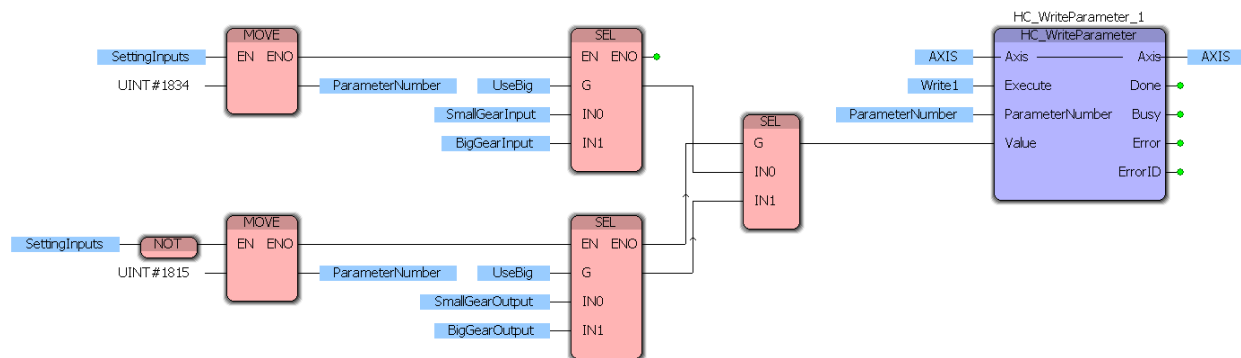
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In this case, it would be wise to attempt to consolidate multiple instances of the same block. With some clever programming, this same task can be accomplished with only one instance of the HC\_WriteParameter block. This simple change has decreased the code size by 75%.



### Solution 3: Upgrade the controller

If neither of these methods works and the program cannot be made to fit within the allocated application code memory space, it may be necessary to upgrade the controller to one with a larger memory capacity.