FAQ: SMD34E2 Removing Main Power

The AMCI SMD34E2 integrated stepper motor driver has Main and Auxiliary terminals on its power connector. The Main supplies power to both the motor and to the electronics while the optional Auxiliary supplies power only to the electronics, including the network connection and the encoder.

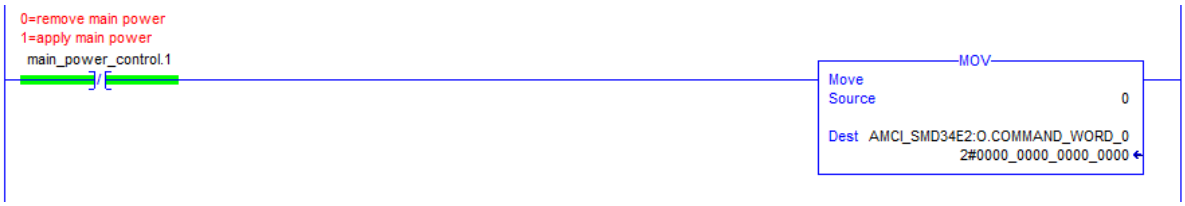
It is a common practice to connect power to both the Main and Auxiliary Power pins and to remove the Main Power as part of a safety system. The Auxiliary Power maintains the network connection while the Main Power is removed.

Removing the Main Power will cause the following to occur.

- The Driver Fault Status bit will be set
- The Position Invalid Status bit will be set
- The Driver Enabled Status bit will be reset

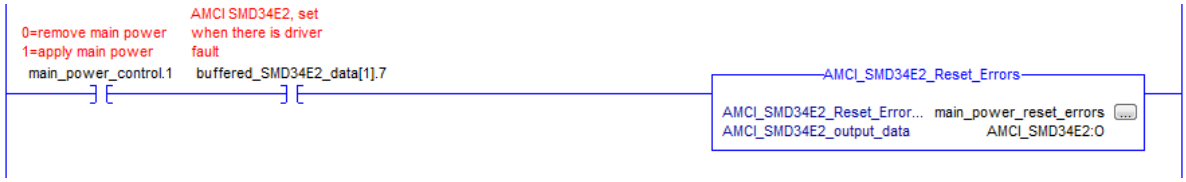
The following three rungs show the action that you should take while the Main Power is removed and the steps needed to recover after the Main Power has been restored.

While the Main Power is removed, write a word of 0 to Output Word 0, which is also called Command Word 0. This will prepare the SMD34E2 to accept the next command after the Main Power has been restored.



After the Main Power has been restored, and if there is a Driver Fault, send the Reset Error command to the SMD34E2.

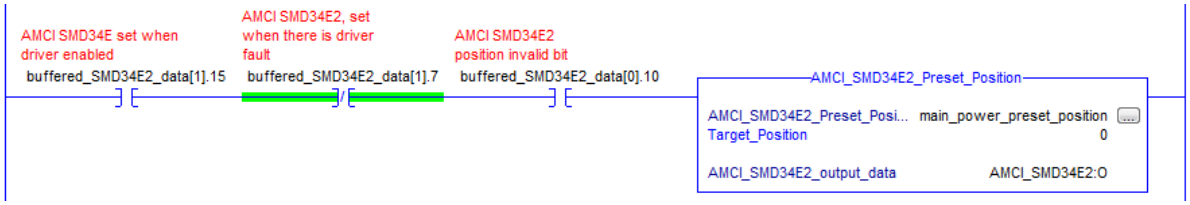
This command will also enable the driver causing it to send power to the motor.



Removing the Main Power also causes the Position Invalid Status bit to become set. This status Bit must be reset before you can perform Absolute Moves, or you can ignore this status bit if you are performing any other type of move.

The following rung Presets the current motor position to the value in the AOI's Target Position field, and also resets the Position Invalid status bit.

The Preset_Motor_to_Encoder, the CW_Home, or the CCW_Home commands can be used in place of the Preset_Position AOI shown here to reset the Position Invalid Status bit.



Common Issues

- Sending the Disable_Driver command to the SMD34E2 at the same time the main power is removed.

  This will cause the SMD34E2 to not detect that the main power has been removed, leading to the status bits not correctly changing state, and finally to the above logic not functioning correctly.

- Sending the Reset_Error command before the Main Power has been restored.

  The SMD34E2 only acts on the 0 to 1 transition of the command bit and sending the reset error command before the main power has been restored will cause the unit to ignore the reset error command.

File: FAQ_SMD34E2_removing_main_power.doc
Date: 10/28/2019