

**ENGINEERING PUBLICATION**

MOTION CONTROL DIVISION

**PRODUCT: SGD8 (LEGEND AMPLIFIER)****SUBJECT: WIRING****CATEGORY: APPLICATION NOTE****ENGINEER: KEVIN HULL****DISTRIBUTION: ALL****CONTROL OF A BRAKE MOTOR USING A LEGEND DRIVE AND LEGEND MC**

The circuit for controlling the servomotor's brake is very simple. It utilizes the Legend Alarm output, the SMC3010 Estop output, and one (1) SMC3010 digital output. If a fault occurs in the Legend amplifier, its Alarm output will turn off, engaging the motor's brake. If a fault occurs within the SMC3010, its Estop output will turn off, engaging the motor's brake. The programmable digital output gives the program control of the motor's brake.

Since the Legend Drive does not generate a fault when Bridge Power is removed, the Alarm output cannot be used to engage the motor's brake. As long as the machine does not allow the Estop to remove bridge power until after all motion has stopped, the Estop can be dealt with one of 2 ways.

- If the vertical load is not so heavy that it rapidly depletes the charge on the bridge power supply, a digital input can be used to monitor the Estop circuit. When an Estop occurs, the SMC3010 can be programmed so an Input Interrupt occurs that will immediately engage the brake. This works only if the residual charge lasts long enough for the brake to engage. (The load may start to fall before the SMC3010 can set the brake.) Setting the dynamic brake will reduce the tendency for the load to fall rapidly.
- If the bridge power supply does not keep the motor in position until the motor's brake is engaged, then the SMC3010 must be given a signal telling it that an Estop is going to be performed. Again, this will cause an Input Interrupt to occur that will immediately engage the motor's brake. Once the brake is engaged, the SMC3010 can set a digital output so a PLC can be notified that an Estop may be completed.

