LogiSystems
AUTOMOTIVE CONTROLLER
ADJUSTMENT PROCEDURES

READ THROUGH THE INSTRUCTIONS COMPLETELY *BEFORE INSTALLING* THE CONTROLLER

WARNING

ENSURE THAT THE DRIVE WHEELS OF THE VEHICLE ARE LIFTED OFF THE DRIVE SURFACE SO THAT THE VEHICLE MOTOR MAY BE RUN WITHOUT PUTTING THE VEHICLE IN MOTION. FAILURE TO DO THIS COULD RESULT IN INJURY OR DEATH OF PERSONS AND/OR DAMAGE TO VEHICLE, EQUIPMENT AND/OR STRUCTURES. BE CAUTIOUS NOT TO OVER REV THE DRIVE TRAIN MOTOR AND COMPONENTS. INSTALL THE NECESSARY ELECTRICAL QUICK DISCONNECT SAFETY COMPONENTS ON THE VEHICLE PRIOR TO CONNECTING ANY POWER.

There are three access screws in the side of the controller. Remove the three screws and keep them for reinstallation. Use a small straight blade alignment tool or screwdriver (1/16 inch or 2.0 mm) for adjustment. Before installing the controller turn the adjustments so that you understand how the tool is inserted and the feel of the adjustments. Do not force the adjustments beyond their stop limits. The access nearest the front of the controller adjusts the ramp (acceleration). The other two give access to motor current limiting adjustment. All three adjustments turn clockwise to increase gain, more aggressive acceleration or to allow greater current to the motor, counter clockwise decreases the gain. Also note that current limiting adjustments will affect acceleration. If, after you are satisfied with current limiting and you want more or less acceleration, adjust only the ramp circuit. It is imperative that the controller be adjusted to the lower responsive settings prior to attempting to drive the vehicle. Assure yourself of smooth starts while the drive wheels are off the driving surface before attempting to drive the vehicle. **This is an extremely high performance controller and if not tuned properly to your motor it will spin the tires and/or break your drive train components.** The following statement may seem comical or extreme but it is true and factual. "This controller is **infinitely adjustable**. If the three adjustments are all turned full counter clockwise the tires will turn slowly with very little power even at full throttle. If your

motor is powerful enough and all three adjustments are turned full clockwise, upon acceleration on the roadway, it may tear the drive wheels and anything else completely off the vehicle." Be sensible and cautious. The factory adjustments most likely will not work with your system. Adjust this controller with the drive wheels off the ground before attempting to drive the vehicle on the roadway. *Start with low settings and work up to your preferred performance level.*

RETURN TO INITIAL SETTINGS

If at anytime you want to return the controller to approximate manufacturer settings, turn the first adjustment to full counterclockwise (ccw), return the second adjustment to full clockwise(cw) then set it to 1/8 turn ccw, return the third adjustment to full ccw and then set it to 1/8 turn cw.

ADJUSTMENT EXPLANATION

The location and identification of the adjustments are in relation to the electrical connections at the front of the controller. The first adjustment is nearest the electrical connections, the second is in the center and the third is furthest from the connectors. The first adjustment access affects the acceleration ramp. If the controller current limits are set at or near its extremes (full on or full off) the ramp adjustment should have little or no effect on acceleration. However, if your intentions are to get maximum performance, as in drag racing vehicles, set it at full cw. You will probably find that a low acceleration setting will suit you best in most street applications.

The second and third adjustment accesses affect the motor current limiting abilities of the controller. The second (middle) adjustment affects the sensitivity and range of the current level adjustments. The third adjustment sets the motor current limit threshold. These adjustments are best affected if adjusted alternately, adjusting one cw and the other ccw starting from opposing starting points cw vs ccw. The second starting from full cw and the third from full ccw and adjusting in no more than 45 degrees (1/8 turn) at a time and testing following each single adjustment. Of course as the current limit is raised your motor will respond accordingly and will come off the stalled armature more aggressively as the current available is increased. *This will be more easily understood after the recommended adjustment process is applied through the Adjustment Procedure.*

ADJUSTMENT PROCEDURE

The controller has been set during factory testing and may be adjusted to your approximate requirements. Your adjustments are to be first made with the vehicle's drive wheels off the surface. Once you approach the desired test acceleration put the vehicle on the drive surface for further adjustments. It is better and easier to make the initial settings low and adjust up to the desired performance settings. If settings acceleration are too aggressive after a few attempts, refer to the "RETURN TO INITIAL SETTINGS."

Following are a few sample settings and explanations for vehicle response. By going through these sequences you should better understand the controller and the entire drive train. Upon setting to the recommended adjustments you should be able to adjust the controller to your personal performance requirements. Experiment around the ¼ turn recommendations, less/more may work better for you.

Test adjustment scenario 1
Adjustment Access #1 Set to full CCW
Adjustment Access #2 Set to full CW
Adjustment Access #3 Set to full CCW
Test vehicle response: Soft start, no wheel spin, acceleration to be smooth but slow

Test adjustment scenario 2
Adjustment Access #1 No change
Adjustment Access #2 No change
Adjustment Access #3 Set to + 1/8 turn CW from above setting

Test vehicle response: More performance at start and acceleration through upper speed ranges

Test adjustment scenario 3
Adjustment Access #1 No change
Adjustment Access #2 Set to + 1/8 turn CCW from above setting
Adjustment Access #3 No change
Test vehicle response: Slightly less performance and acceleration than above test

Test adjustment scenario 4
Adjustment Access #1 No change
Adjustment Access #2 No change
Adjustment Access #3 Set to + 1/4 turn CW (add 1/8 turn from above setting)

Test vehicle response: Smooth acceleration from start, after start acceleration is moderately aggressive.

Test adjustment scenario 5
Adjustment Access #1 No change
Adjustment Access #2 Set to + 1/4 turn CCW (add 1/8 turn from above setting)
Adjustment Access #3 No change
Test vehicle response: More aggressive at start, after rolling start acceleration is near tire breaking (spin) point.

Test adjustment scenario 6

Adjustment Access #1	Set to 1/4 turn CW from full CCW
Adjustment Access #2	No change
Adjustment Access #3	No change

Test vehicle response: Little change in feathered low speed start, excellent ramp – developed wheel hop and spin upon acceleration from 10-15 mph rolling start – wheel hop continued until accelerator released at approximately 50 mph (approx 3 seconds).

Test scenario 7 NOT RECOMMENDED

Adjustment Access #1	Set to full CW
Adjustment Access #2	Set to full CW
Adjustment Access #3	Set to full CW

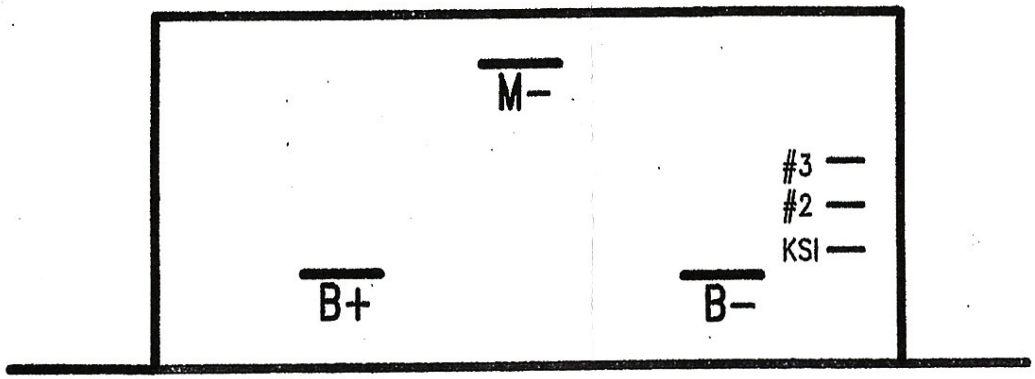
Test vehicle response: Exceedingly aggressive start, very acute ramp at all speeds – wheel spin at all low speed accelerations. These settings should be used cautiously and are not recommended for street applications.

If you need assistance in tuning this controller contact your dealer or call LogiSystems at 432-381-6000.

5/23/2008

LogiSystems

AUTOMOTIVE CONTROLLER PINOUT



B+ BATTERY +
B- BATTERY B-
M- MOTOR-
KSI KEY SWITCH INTERLOCK
#2 & #3 0-5K OHM INPUT