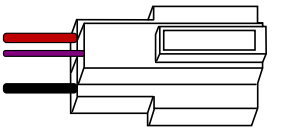
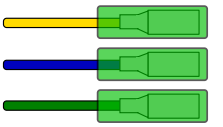
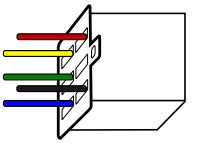
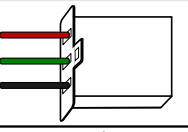
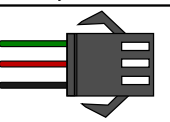
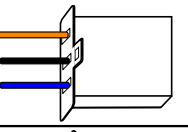
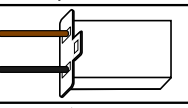
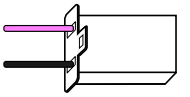
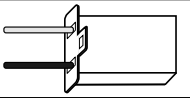
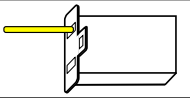
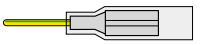
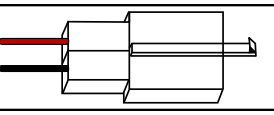
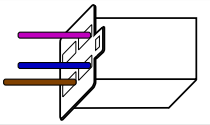
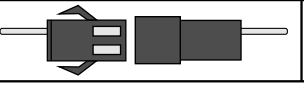
SPD-48600BLDC 48 Volt 500-600 Watt Brushless DC Motor Controller

Operating Voltage: 41 through 58 Volts DC (48 Volt Battery Pack)
Power: 600 Watts (Compatible with 500-600 Watt Brushless DC Motors)
Current Limit: 30 Amps (30 Amps Maximum Current Output)
Low Voltage Protection: 41 Volts (Turns Motor Off When Battery Pack is Under 41 Volts)
Works with both Sensored and Sensorless Brushless DC Motors
Compatible with 120 Degree and 60 Degree Phase Angle Motors

Input Power and Power Switch Wires		Red Wire to Battery Positive + Purple Wire to Power Switch Contact Black Wire to Battery Negative - *When Purple Wire makes contact with Battery Positive Wire the power is on.
Motor Phase Wires		Yellow to Yellow Motor Phase U Wire Blue to Blue Motor Phase V Wire Green to Green Motor Phase W Wire
† Motor Hall Sensor Wires		Red to Red Motor Hall Wire +5V Black to Black Motor Hall Wire Negative - Yellow to Yellow Motor Hall U Wire Green to Green Motor Hall W Wire Blue to Blue Motor Hall V Wire
* Throttle Wires		Red +5 Volt Output Green 1-4 Volt Signal Input Black Negative -
* Pedal Assist (PAS) Wires		Green PAS Signal Input Red +5 Volt Output Black Negative -
† 3 Speed Control Wires		Orange to Black for High Speed Black to No Wire for Normal Speed Blue to Black for Low Speed
† Reverse Wires		Brown to Reverse Switch Contact Black to Reverse Switch Contact
† Cruise Control Wires		Pink to Cruise Control Switch Contact Black to Cruise Control Switch Contact
† Low Level E-Brake Wires		White to Low Level Brake Switch Contact Black to Common Brake Switch Contact
† High Level E-Brake Wires		Yellow to +12 Volt Brake Signal
† Speedometer Wire		Yellow/Green to Speedometer Positive +
† Alarm Power Wires		Red to Alarm Positive + 24V Input Black to Alarm Negative - Input
† Alarm Signal Wires		Purple to Vehicle Power On Signal Blue to Motor Disable Signal Brown to Alarm Power On Signal
** Self Learning Wires		White to White for Self Learning Mode

† Optional Connections: These wires do not need to be connected for the controller to operate.
* Either the Throttle and or Pedal Assist Sensor wires need to be connected for the controller to operate.
** The Self Learning Wires can be connected together to train the controller to operate with the motor that it is attached to and then disconnected after the training has been completed.

Controller Programming Directions

The controller requires programming after installation otherwise the motor may not operate normally or the motor's shaft may not rotate in the direction that it needs to.

Programming Directions

1. Prop the drive wheel in the air or remove the chain or belt from the motor. When the Self Learning Wires are plugged together the motor will automatically spin at a reduced speed so the drive wheel of the vehicle need to be propped in the air so it can spin freely, or the chain or belt needs to be removed if propping the drive wheel in the air is not possible.

2. Turn the vehicle's power switch or key switch on.

3. Plug the Self Learning Wires together. If the motor is now spinning in the direction that you want it to then unplug the Self Learning Wires and turn off the vehicle's power switch or key switch. Programming is now complete and the vehicle is ready to use.

4. If the motor spins in the oposite direction that you want it to when the Self Learning Wires are plugged together then unplug the Self Learning Wires, wait 10 seconds, and then plug the Self Learning Wires together again. If the motor is now spinning in the direction that you want it to then unplug the Self Learning Wires and turn off the vehicle's power switch or key switch. Programming is now complete and the vehicle is ready to use.

5. If following the programming directions above does not work then turn the vehicle's power switch or key switch off, wait 10 seconds, and try again.

Installation Notes

Low Level and High Level E-Brake Wires

1. The Low Level and High Level E-Brake Wires are optional to connect to and the controller will operate normally with nothing connected to them.

2. The E-Brake is designed to help slow the vehicle down, however, not to bring it to a full stop. Mechanical brakes must be used in conjunction with the E-Brake if the E-Brake is used.

3. The Low Level E-Brake Wires connect to a normally open SPST brake switch.

4. The High Level E-Brake Wires connect to a +12 Volt DC brake light wire.

5. The E-Brake connectors are optional to use, however, if they are used then use either one or the other, and do not use both of them at the same time.

Cruise Control, Reverse, and 3 Speed Control Wires

1. The Cruise Control, Reverse, and 3 Speed Control Wires are optional to connect to and the controller will operate normally with nothing connected to them.

2. The Cruise Control Wires connect to a 2 position On-Off maintained contact SPST switch.

3. The Reverse Wires connect to a 2 position On-Off maintained contact SPST switch.

4. The 3 Speed Control Wires connect to a 3 position On-Off-On maintained contact SPDT switch.