

## SPD-481000BLDC 48-64 Volt DC 1000 Watt Brushless DC Motor Controller

**Battery Pack Compatibility:** Compatible with 48 Volt, 60 Volt, and 64 Volt Battery Packs


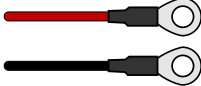
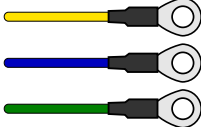
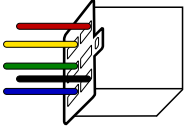
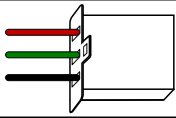
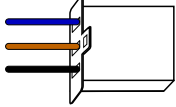
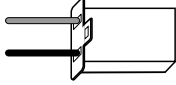
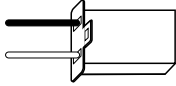
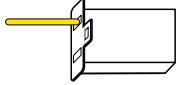
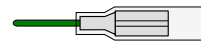
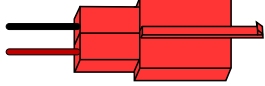
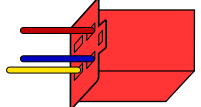


**Motor Compatibility:** Recommended for Brushless DC Motors Between 1000 and 1200 Watts

**Current Limit:** 45 Amps (45 Amps Maximum Current Output)

**Low Voltage Protection:** 41 Volts with 48 Volt Battery Pack, 52 Volts with 60 Volt Battery Pack, 52.5 Volts with 64 Volt Battery Pack

**Sensor Information:** Compatible with both Sensored and Sensorless Brushless DC Motors

**Phase Information:** Compatible with 120 Degree and 60 Degree Motor Phases

Power Switch Wire		Red to Power Switch Contact <i>The Other Power Switch Contact Goes To Battery Positive +</i>
Input Power Wires		Red Wire to Battery Positive + Black Wire to Battery Negative -
Motor Phase Wires		Yellow to Yellow Motor Phase Wire Blue to Blue Motor Phase Wire Green to Green Motor Phase Wire
† Motor Hall Sensor Wires		Red to Red Motor Hall Wire +5V Black to Black Motor Hall Wire Ground Yellow to Yellow Motor Hall Wire Green to Green Motor Hall Wire Blue to Blue Motor Hall Wire
* Throttle Wires		Red +5 Volt Output Green 1-4 Volt Signal Input Black Ground
† 3 Speed Control Wires		Blue to Brown for High Speed Brown to No Wire for Normal Speed Black to Brown for Low Speed
† Reverse Wires		Gray to Reverse Switch Contact Black to Reverse Switch Contact
† Switch Brake Switch Wires		Black to Brake Switch Contact White to Brake Switch Contact
† Voltage Brake Switch Wire		Yellow to +12 Volt Brake Signal
† Speedometer Wire		Green to Speedometer
† Alarm Power Wires		Black to Alarm Positive - Input Red to Alarm Positive + Input
† Alarm Signal Wires		Red to Vehicle Power On Signal Blue to Motor Disable Signal Yellow to Alarm Power On Signal
† Cruise Control Wires		Black to Cruise Control Switch Contact Orange to Cruise Control Switch Contact
** Self Learning Wires		Connect Together to Program Controller Disconnect After Programming Is Complete

† Optional Connections: These wires do not need to be connected for the controller to operate.

\* Either the Throttle and or Pedal Assist Sensor needs to be connected for the controller to operate.

\*\* The Self Learning Wires must be used to program the controller after installation. Controller programming directions are available on the next page.

## 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.
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## Installation Notes

### Switch and Voltage Brake Switch Wires

1. The Switch and Voltage Brake Switch Wires are optional to connect to and the controller will operate normally with nothing connected to them.
2. When the Brake Switch is activated the controller turns off the motor, and when the brake switch is released the controller turns the motor back on.
3. The Switch Brake Switch Wires connect to a normally open SPST brake switch.
4. The Voltage Brake Switch Wire connect to a +12 Volt DC brake light wire.
5. The Switch and Voltage Brake Switch 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 can be permanently plugged in together, or connected to a 2 position On-Off maintained contact SPST switch. When the cruise control function is enabled, cruise mode is activated when the throttle is released after the vehicle has been running at a constant speed for a few seconds. Moving the throttle again deactivates cruise mode.
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.