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INSTALLATION & OPERATING INSTRUCTIONS



**MOTOR & CONTROLLER
SPM 1.2**

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GENERAL INFORMATION

SPM (Shakti Powertrain Motor) are customized to meet customer's special requirements. These motors provide high performance with features and solution for individual and industrial applications such as commercial vehicle, Auto, L 5 Loader, Road sweeper machine, retro fitment, E-Rickshaws and E-Vehicles etc.

SPM series is characterized by reliable technology and flexible configurations. Our air-cooled motors are not affected by potential motor heat generated that might impair system performance. The option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities

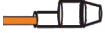


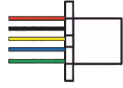
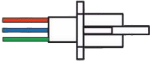


SHIPMENT INSPECTION


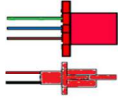
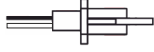
Examine the components carefully to make sure no damage has occurred to the motor & controller during shipment. Care should be taken to ensure the motor & controller is NOT dropped or mishandled.

CHECKING THE CONDITION OF THE PRODUCT

The shipping carton in which your product arrived is specially designed to prevent damage during shipment. As a precaution, the product should remain in the carton until you are ready to install it. Examine the product for any damage that may have occurred during shipping. Examine any other parts of the shipment as well for any visible damage.

INSTALLATION GUIDE LINES

Name of wire	Wire Design	Description of wire	Remarks
POWER SWITCH WIRE		1. RED wire – Power switch wire	Red Switch Wire to Connect to positive terminal of DC input of controller.
INPUT POWER WIRE		1. RED(+) Positive terminal of battery. 2. Black(-) Negative terminal of battery.	Connect Positive terminal of battery to RED wire and negative terminal of battery to BLACK wire.
OUTPUT POWER WIRE		1. Green to Green (G) 2. Blue to Blue (B) 3. Yellow to Yellow (Y)	Connect BLDC Motor wires Green, Blue & Yellow with controller's Green, Blue & Yellow wires.
HALL SENSOR		1. Red – Positive terminal of 5V supply. 2. Black- Connect to ground 3. Blue to blue + 4. Green to green 5. Yellow to yellow	Connect motor hall sensor wire to controller hall sensor wire with same color.
THROTTLE WIRES		1. Red to positive 2. Green to voltage signal 3. Black to ground	Connect throttle wire of accelerator to throttle wire of controller with same color.
METER WIRE		Blue Meter wire	Connect blue wire meter connector to speedometer connector.
HIGH VOLTAGE BREAK		Red wire with 1 Pin connector	Connect with EV Harness.

REVERSE		1. Black & RED wire with 2 pin connector.	Connect BLACK and RED wire controller connector to reverse & connector of throttle.
ANTI THEFT		1. Red & Black are power wire with 2 pin connector. 2. Blue, Red & Green are anti-theft sensor wire with 3 pin connector.	Connect all wire with Anti-Theft Device.
LOW VOLTAGE BREAK		1. Red & Black wire with 2 pin connector.	Connect With EV Harness
		Not in use 3 pin & 2 pin connector	

TECHNICAL SPECIFICATIONS

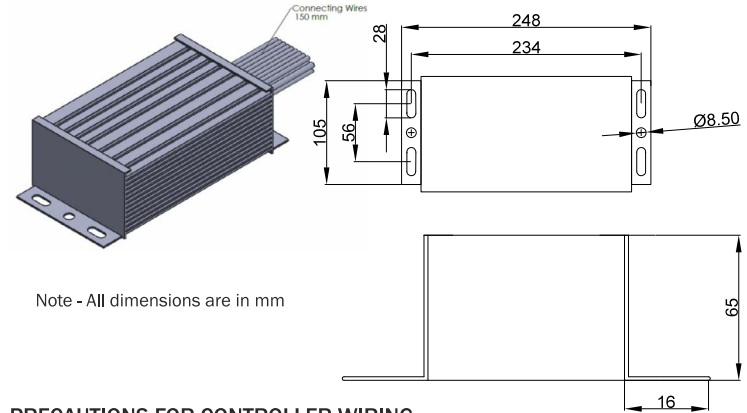
Operating voltage : 36V/48V DC
Peak current : 50 A
Rated power : 1.2kW

FEATURES

- Voltage selection (36V/48V)
- Lower cut off voltage (for 36V, 48V separately)
- Higher cut off voltage (for 36V, 48V separately)
- Throttle
- Three speed (Low, medium, high)
- Cruise control

MECHANICAL DIMENSIONS

Dimensions (L X B X H) – 140 X 66 X 43 mm



Note - All dimensions are in mm

PRECAUTIONS FOR CONTROLLER WIRING

1. The Controller should be installed in a ventilated place. Before wiring, first disconnect the power supply, and then connect wires according to the installation guidelines (Wiring Diagram).
2. Confirm that the positive and negative poles of the power supply are connected properly. Do NOT connect positive and negative polarity of the power wire wrongly or in reverse (refer to the installation guidelines (Wiring Diagram)).
3. After installing the Controller as per the Wiring Diagram, connect the throttle connection and check the motor rotation. If the motor does not run, please check the following:
 - Positive and negative supply of the battery terminal (check the Voltage Level & Polarity)
 - Hall Wire Voltage

4. If the motor not runs smoothly or if the motor is blocked, check that the motor phase wires are not short-circuited. Adjust the sequence of motor phase wires or the sequence of hall wires.

5. After installing the Controller, open the electric door lock. If the motor does not respond you get any burning smell, immediately disconnect the Controller power cable from the Electric Vehicle power cable. Check whether the positive pole and negative pole of the power cable of the Controller are connected in reverse with the positive pole and negative pole of the power cable of the Electric Vehicle. If the connection is reversed, the Controller may have short-circuited and burnt out.

6. There are pair of contacts on the brake handle from which two wires are drawn, which are required to be connected to the brake-level wire on the Controller. Depending on the actual position of the original vehicle wire, the low-level brake and the high-level brake should be selected accordingly.

7. EMF Innovation's Controller has only one electric door lock wire. If your original vehicle's electric door lock has two wires, connect one of the wires of the vehicle's electric door lock to the electric door lock wire on the Controller. Connect the other wire of the vehicle's electric door lock in parallel to the power positive wire of the Controller or battery power positive wire. (If the length of the lock wire of the original vehicle's electric door lock is not enough, you can use any other thin wire to act as the connecting wire and install it in the Electric Vehicle.)

8. Some vehicles have special motors, so it is necessary to reverse the order of Step 5 and Step 6 as specified under the Installation and Debugging Instructions on the following page.

INSTALLATION REPORT

Customer's Name: - _____

Customer's Address: - _____

Customer's Ph. No.: _____

Dealer's Name: - _____

Dealer's Address: _____

Dealer's Ph. No. _____

Pump Model:- _____ S.L.No: _____

Project/Application: _____

Pressure In Kg:- _____ Flow in m³/hr: _____

Liquid:- _____ Temp.: _____

Voltage:- _____ Current: _____

Packing Condition:- _____

Remarks: _____

Date:- _____

Customer's Signature

BOOK-POST

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