

1. General Information

1.1 System Overview

- An Intelligent tracker controller.
- 24VDC motor control.
- Wireless Zigbee & BLE communication.
- System category – To drive a solar PV tracker structure through a driving mechanism in accordance with the sun's path during the day to achieve maximum energy from the sunlight.
- Operational Status – Under Development

1.2 Points of Contact

- Information – Please read user manual carefully before installation.
- Help Desk – Please contact FTC Solar Inc for any kind of technical & troubleshooting support @ www.ftcsolar.com.

1.3 Safety

Personal Protective Equipment (PPE) shall be worn in accordance with project regulations. Standard PPE may include but is not limited to:

- Steel toed boots
- Hard hat
- Protective eyewear
- Visibility vests
- Gloves

All construction personnel must be trained to install and operate this product.



WARNING! Denotes a potentially dangerous situation which may lead to physical injury and / or property damage.



DANGER OF SHOCK! Denotes a potentially dangerous electrical situation which may lead to physical injury and / or property damage.

2. System Summary

2.1 System Configuration – Rover 3

Rover 3 Voyager tracker controller is an intelligent solar tracker controller. It has a LiFePO4 battery inside as backup power, electronic PCB for computing sun algorithm, control the motor drive and charge the battery.

2.2 System Configuration – PV Modules

Rover3 is connected with 2 No's 60Wp series PV modules to charge the battery.

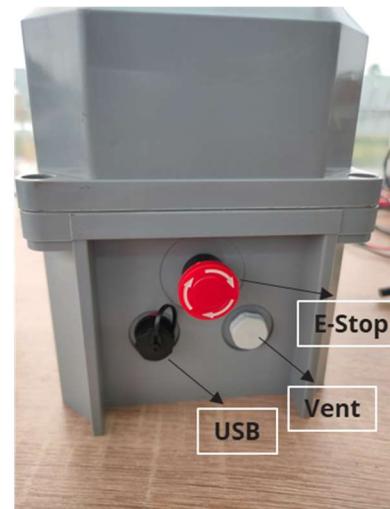
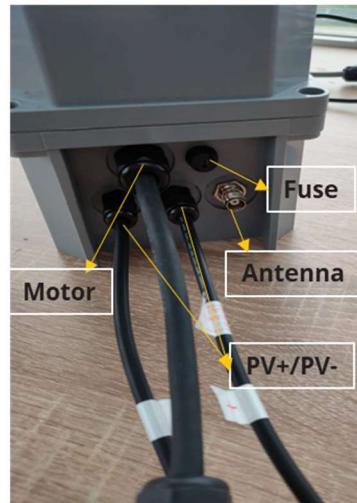
2.3 System Configuration – Motor

Rover3 is connected to a 24V DC planetary gear motor to drive the voyager tracker structure.

2.4 System Configuration – Ports

Rover3 has multiple ports/peripherals to connect with for its operation

- PV+/PV- Connector – To charge Battery
- Motor Connector – To drive DC motor
- Antenna Connector – To communicate over Zigbee
- Fuse – For Electrical protection
- E-Stop – To disconnect the operation
- USB – For wired communication
- Vent – To maintain pressure
- LED – For status indication



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3. Operations and Others

3.1 Functionality

- Rover3 voyager controller shall be mounted on the tracker structure as per the installation manual for its operation.
- Required connectors and peripherals shall be connected as per the installation manual – PV+/PV-, Motor, Antenna.
- Release the E-Stop switch to turn the controller ON.
- Use BLE or Wired USB connection to communicate and configure with the Rover3 controller as per the installation manual.
- After configuration of Zigbee Communication address as per corresponding zone controller, Rover 3 controller can share data / status at user defined intervals

3.2 Label & Warning*

Label shall be embossed on Enclosure LID. Below is the proposed content and post all certification, Label will be embossed with certification symbols.



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FCC Warning:

ROVER 3

Model Name: 840300 -01 or 840300 -02 or 840300 -03 or 840300 -04

FCC ID:2A3I9-840300

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.



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4. Specifications

RC Rover 3.0 Specifications		
	MPN: 840300	Date: 26th October 2021
Sl.No	Item	Reference
A	Power	
1	Power	Self Powered 24V DC controller
2	Rated Input Voltage	60VDC
3	Rated Input Current	6A
4	Rated Input Power	200W
5	Rated output voltage	0-30 VDC
6	Rated output current	16A
B	Battery	
1	Battery Type	LiFePO4
2	Battery Capacity	6Ah (1 day) / 12Ah (3 days)
C	Protection	
1	Electrical	Reverse Polarity, Current Limiting, Surge / Transient, Short circuit, Fuse
2	Mechanical	Nema 4x / IP65
3	Operating temperature	-20°C to +65°C *
4	UV protection	UV resistant
D	MCU	
1	MCU	Arm Cortex M7, 32Bit
2	Sensors	Accelerometer, Temperature, Voltage & current
3	Communication (Wired)	USB
4	Communication (Wireless)	Zigbee, BLE
5	Indication	LED
E	Others	
1	Dimension (L x B X H) in mm	360 x 135 x 171
2	Weight (kg)	3.5 to 5 (based on variance)
F	Part number variance	
1	840300 - 01	6Ah Battery
2	840300 - 02	12Ah Battery
3	840300 - 03	6Ah battery with Cold weather package
4	840300 - 04	12Ah battery with Cold weather package

* Battery discharge temperature rating; Battery charges at 0 to 45°C without cold weather package