

## Installation Instructions for PowerCommand 1.x Controller to PowerCommand 2.x Controller, Conversion Kit 300-6451-02

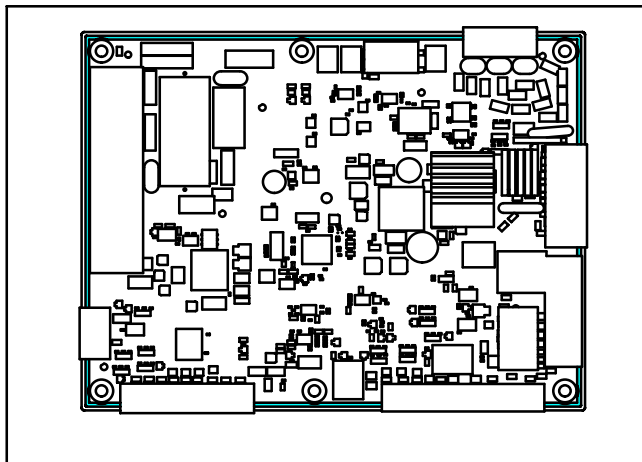


FIGURE 2-1. POWERCOMMAND 2.X CONTROL-  
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**NOTE:** The PowerCommand 2.x controller does not support a local status lamp or the AUX 101/102.

**NOTE:** The PowerCommand 2.x controller cannot monitor battery-charging alternators with non-IC regulators and battery chargers.

### GENERAL INFORMATION

This Instruction Sheet describes the steps required to replace a PowerCommand 1.x controller with a PowerCommand 2.x controller. This kit includes the following items.

| PART DESCRIPTION                 | QTY |
|----------------------------------|-----|
| PowerCommand 2.x Controller      | 1   |
| M4 screws (0.7 x 25)             | 6   |
| PowerCommand 2.x Operator Manual | 1   |

**NOTE:** If your installation does not include operator panel PN 300-6314 or PN 300-6315, it must be purchased separately before installing this kit.

The procedures in this Instruction Sheet require the following additional items.

- PC-based tool harness (PN 0541-1199)
- InPower™
- Latest calibration file for the PowerCommand 2.x controller

### SAFETY PRECAUTIONS

Read these instructions completely and become familiar with safety warnings, cautions, and procedures before starting the installation.

**⚠ WARNING** *Incorrect installation, service, or parts replacement can result in severe personal injury, death, and/or equipment damage. Service personnel must be trained and experienced to perform electrical and mechanical component installations.*

**⚠ CAUTION** *A generator set control must be serviced only by technically qualified personnel. High voltages are present. These voltages can cause electrical shock, resulting in personal injury.*

*Even with power removed, improper handling of components can cause electrostatic discharge and damage to circuit components.*

**⚠ WARNING** *AC voltages and currents present an electrical shock hazard that can cause severe personal injury or death. Incorrect installation, service, or parts replacement can result in severe personal injury, death, and/or equipment damage. Only trained and experienced personnel are to perform the following procedures.*

Turn off or remove AC power from the battery charger and then remove the negative (–) battery cable from the set starting battery. This is to make sure the set will not start while working on it and to avoid circuit board damage, caused by voltage spikes when removing and replacing circuit board connectors.

**⚠CAUTION** *If present, always disconnect a battery charger from its AC source before disconnecting the battery cables. Otherwise, disconnecting the cables can result in voltage spikes high enough to damage the DC control circuits of the generator set.*

**⚠WARNING** *Accidental starting of the generator set while working on it can cause severe personal injury or death. Prevent accidental starting by disconnecting the starting battery cables (negative [–] first).*

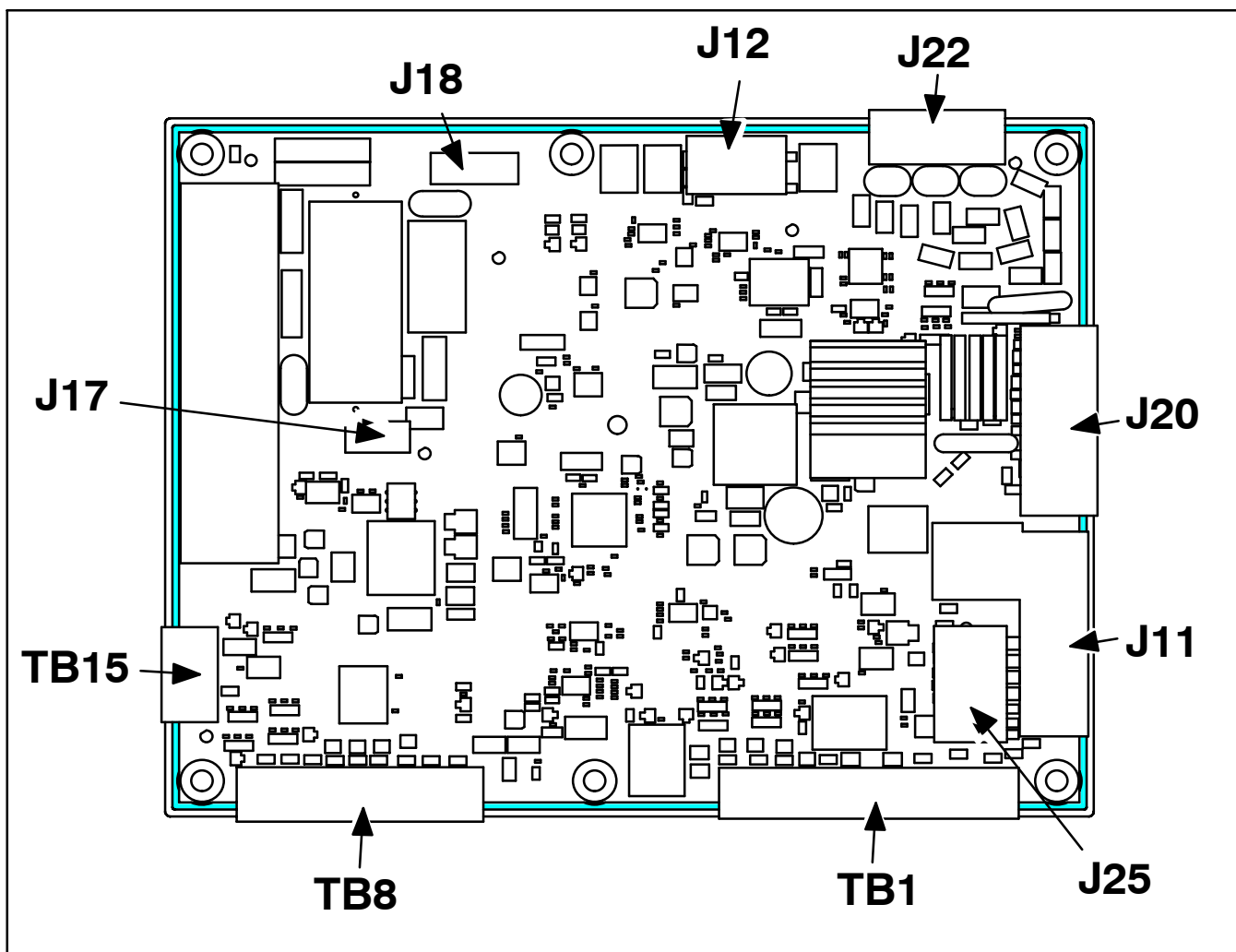
*Make certain the battery area has been well-ventilated before servicing the battery—Wear goggles—Stop the genset and disconnect the charger before disconnecting battery cables. Arcing can ignite explosive hydrogen gas given off by batteries, causing severe personal injury. Arcing can occur when a cable is removed or re-attached, or when the negative (–) battery cable is connected and a tool used to connect or disconnect the positive (+) battery cable touches the frame or other grounded metal part of the generator set. Always remove the negative (–) cable first, and reconnect it last. Make certain hydrogen from the battery, engine fuel, and other explosive fumes are fully dissipated. This is especially important if the battery has been connected to a battery charger.*

**⚠WARNING** *Ignition of explosive battery gases can cause severe personal injury or death. Arcing at battery terminals, light switch or other equipment, flame, pilot lights and sparks can ignite battery gas. Do not smoke, or switch trouble light ON or OFF near a battery. Discharge static electricity from body before touching batteries by first touching a grounded metal surface.*

## KIT INSTALLATION

1. Record your PowerCommand 1.x controller settings. Connect your computer to TB15 on the PowerCommand 1.x controller, and use InPower to create a capture file. You will use this information in step 16.
2. Disconnect your computer from the PowerCommand 1.x controller.
3. Make sure the control is in the **Off** mode by pressing the  button.
4. Disconnect the battery charger (if equipped). Remove all electrical supply sources.

**⚠WARNING** *Ignition of explosive battery gases can cause severe personal injury. Do not smoke or cause any spark, arc, or flame while servicing batteries.*
5. Disconnect the generator set starting battery cables. Disconnect the negative (–) cable first to reduce the risk of arcing.
6. Disconnect all wiring connections to the PowerCommand 1.x controller.
7. Remove the PowerCommand 1.x controller.
8. Look in the back of the control box for the six holes that align with the PowerCommand 2.x controller. Use the screws included in this kit to install the PowerCommand 2.x controller.
9. Connect all wiring harnesses to the PowerCommand 2.x controller the same way they were connected to the PowerCommand 1.x controller. See Figure 1 for the location of each connection on the PowerCommand 2.x controller.



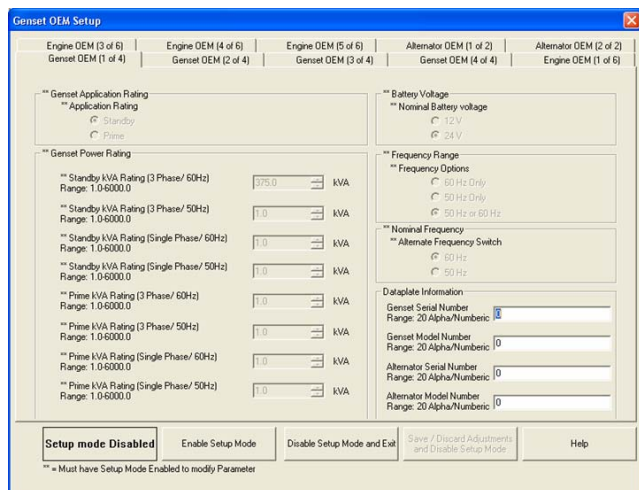
**FIGURE 1. POWERCOMMAND 2.X CONTROLLER CONNECTIONS**

**TABLE 1. POWERCOMMAND 2.X CONTROLLER CONNECTIONS**

| CONNECTION | DESCRIPTION                             |
|------------|-----------------------------------------|
| J11        | Engine input and output                 |
| J12        | CT input                                |
| J17        | AVR control                             |
| J18        | AVR input                               |
| J20        | Genset input and output                 |
| J22        | PT input                                |
| J25        | Accessories input and output            |
| TB1        | Customer input and output               |
| TB8        | Customer input and output               |
| TB15       | Modbus, PC-based service tool interface |

- Reconnect the generator set starting battery. Connect the positive cable (+) first.
- Reconnect the battery charger (if equipped).
- Connect your computer to TB15 on the PowerCommand 2.x controller, and start InPower.
- Download the latest calibration file to the PowerCommand 2.x controller. Follow the directions in instruction sheet G755 (available at <http://www.cumminspower.com>) to get the latest calibration file, if necessary.

14. In InPower, while you are still connected to the PowerCommand 2.x controller, right-click on the PCC2300 in the main tree, and select **Genset OEM Setup....** The **Genset OEM Setup** window appears.



**FIGURE 2-2. GENSET OEM SETUP WINDOW**

15. Press **Enable Setup Mode**.
16. Refer to the settings recorded in step 1 and adjust the settings in the **Genset OEM Setup** window as necessary.
17. When you have finished adjusting the settings, press **Disable Setup Mode and Exit**.
18. Test the installation by starting the genset and verifying proper operation.
19. Disconnect your computer from the PowerCommand 2.x controller.
20. Set the control to the desired operating mode.

See the PowerCommand 2.x Operator Manual for information about menus.