

IGBT Test Method

The following procedure will check the inverter transistors (IGBTs) and diodes:

1. Disconnect input power to terminals (U_1 , V_1 , and W_1) and motor terminals (U_2 , V_2 , and W_2).
2. Disconnect any wires from terminals (UC+) and (UC-) for regenerative braking.
3. Use a Digital Volt Meter (DVM) and set it for 1 ohm resistance range. You can check the status of the charging state of terminals (U_1 , V_1 , W_1 , U_2 , V_2 , W_2 , UC+, and UC-) of the inverter and the probe of the DVM by measuring the charging state.

Almost infinite ohms = "nonconducting," and 0 to 10 ohms = "conducting."

NOTE: *The resistance values for the diodes or the transistors will not be exactly the same, but they will be close. If you find a significance difference, a problem may exist.*

Inverter Component Values

| CIRCUIT TYPE | DVM PROBE | | MEASURED VALUE |
|--------------------------|-----------|-----------|----------------|
| | + | - | |
| INPUT CONVERTER SECTION | D3 | U_1 UC+ | Conducting |
| | | UC+ U_1 | Nonconducting |
| | D2 | V_1 UC+ | Conducting |
| | | UC+ V_1 | Nonconducting |
| | D1 | W_1 UC+ | Conducting |
| | | UC+ W_1 | Nonconducting |
| | D6 | U_1 UC- | Nonconducting |
| | | UC- U_1 | Conducting |
| | D5 | V_1 UC- | Nonconducting |
| | | UC- V_1 | Conducting |
| | D4 | W_1 UC- | Nonconducting |
| | | UC- W_1 | Conducting |
| OUTPUT CONVERTER SECTION | TR3 | U_2 UC+ | Conducting |
| | | UC+ U_2 | Nonconducting |
| | TR2 | V_2 UC+ | Conducting |
| | | UC+ V_2 | Nonconducting |
| | TR1 | W_2 UC+ | Conducting |
| | | UC+ W_2 | Nonconducting |
| | TR6 | U_2 UC- | Nonconducting |
| | | UC- U_2 | Conducting |
| | TR5 | V_2 UC- | Nonconducting |
| | | UC- V_2 | Conducting |
| | TR4 | W_2 UC- | Nonconducting |
| | | UC- W_2 | Conducting |

Inverter Diodes and IGBT Components

