

[Previous Screen](#)

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Troubleshooting

EMCP 3

Media Number -RENR7902-01

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Digital Output Circuit Fault

SMCS - 4490

System Operation Description:

Digital Outputs are used to convey on/off information from the Genset Control for energizing loads such as relays, solenoids, and indicator lamps. The digital output must not be connected directly to battery positive (B+).

Conditions Which Generate This Code:

This code is occurs when the digital output wiring is shorted to battery positive (B+).

Test Step 1. CHECK FOR A SHORTED HARNESS

- A. Turn the key start switch and the disconnect switch to the OFF position.
- B. Disconnect the harness connector from the EMCP 3.
- C. Disconnect the digital output from the device it is connected to.
- D. At the harness connector for the EMCP 3, measure the resistance from the failed digital output contact to all other EMCP 3 harness contacts.

Expected Result:

Each resistance measurement is greater than 5000 ohms.

Results:

- **OK** - Each resistance measurement is greater than 5000 ohms. The harness is correct. Proceed to Test Step 2
- **NOT OK** - Each resistance measurement is not greater than 5000 ohms. There is a short in the

harness on the wire that has that has a low resistance measurement.

Repair: Repair the harness or replace the harness.

STOP

Test Step 2. CHECK THE DEVICE CONNECTED TO THE DIGITAL OUTPUT CIRCUIT WIRING FOR SHORT TO THE +BATTERY CIRCUIT.

- A. In order to prevent the engine from running while performing this procedure, press the Emergency Stop Push Button and turn the battery disconnect switch to the ON position.
- B. At the digital output device, measure the DC voltage on the wire connected to the failed digital output.

Expected Result:

The voltage is at or near 0 volts DC and not shorted to battery positive (B+).

Results:

- **OK** - The digital output device is not shorted to battery positive (B+). Proceed to Test Step 3
- **NOT OK** - The digital output device is shorted to battery positive (B+)

Repair: Repair the digital output device or replace the digital output device.

STOP

Test Step 3. CHECK IF THE DIAGNOSTIC CODE REMAINS

- A. Inspect the EMCP 3 connector and clean the contacts of the EMCP 3 connector.
- B. Reconnect the harness connector.
- C. Reset the genset.
- D. Operate the genset.
- E. Check the status of the diagnostic code.

Expected Result:

The diagnostic code is not active.

Results:

- **OK** - The diagnostic code is not active. The diagnostic code does not exist at this time. The initial diagnostic code was probably caused by a poor connection or a short at one of the connectors that

was disconnected and reconnected. Resume normal operation.**STOP**

- **NOT OK** - The code is active. The diagnostic code has not been corrected. The ECM may have failed.

Repair: It is unlikely that the ECM has failed. Exit this procedure and perform this procedure again. If the cause of the failure is not found, replace the ECM. See Testing and Adjusting, "Electronic Control Module (Generator Set) - Replace".

STOP