Allen-Bradley 81001-450-51-R

01 Retain the assembly identity

1 Locate the affected power position

Record the complete 81001-450-51-R marking and the drive phase/device-position fault code. Keep the optical leads and firing-card supply connection associated with that position.

2 Preserve the replacement form

Confirm that the assembly calls for a single 800 A SGCT. A different current class or a matched-set reference is a separate selection.

Device class	800 A SGCT
Replacement form	single device
Platform	PowerFlex 7000

02 Prepare an isolated inspection

1 Apply the drive service procedure

Only qualified drive-service personnel should access the medium-voltage power structure. Isolate all energy sources and complete the prescribed discharge and verification procedure before physical inspection.

2 Retain the diagnostic evidence

Record the fault message and operating stage before resetting. Distinguish initial contactor closure, startup and post-reset diagnostics so that the observed feedback state remains meaningful.

Offline	Compare feedback around the gate event
DiagFbkLoss	Feedback remains low
Gating Loss	Feedback remains high

03 Trace the optical and supply paths

1 Inspect each optical connection

Inspect seating at the optical interface and SGCT firing card. Check for pinched or damaged fibers. For Gating Loss, include the DPM-to-OIB connection in the investigation.

2 Check gate-drive power

Use the prescribed safe test arrangement to verify the associated nominal 20 V source and the firing-card power connections. An active source does not prove a secure connection at the device.

Offline supply check	19.6–20.4 V
Feedback path	Optical return to interface board
Gating path	Optical pulse to firing card

04 Correlate device and driver tests

1 Interpret resistance cautiously

Perform the SGCT resistance check using the drive procedure. Do not classify a device as healthy solely because it is not a complete short; low suspect readings may remain in the kilohm range.

2 Compare active diagnostic indications

Inspect gate-driver LEDs and complete the approved Gating Test. Correlate the physical device position with its returned feedback and the stored fault, rather than relying on a replacement label alone.

Device check	Prescribed resistance test
Driver check	LED state and Gating Test
Release basis	Consistent device, supply and optical results

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05 Verify restoration of the power path

1 Resolve associated causes

If feedback loss implicates the motor filter capacitor, complete the prescribed capacitor investigation. A synchronous-transfer system must not return to transfer operation with that condition unresolved.

2 Complete the drive-specific release

Use the approved startup and diagnostic sequence for the exact drive. Retain replacement identity, test observations and fault-clearance results with the service record before releasing the motor circuit.

Technical basis: Rockwell Automation PowerFlex 7000 Troubleshooting Guide, 7000-TG002L-EN-P, February 2020.

Related product navigation

- Allen-Bradley 81001-451-63-R
- Allen-Bradley 81004-286-52-R

These are related references, not confirmed substitutes or an automatically approved assembly.