NGDR-07C-NGDR-07-FF650R17IE4

01 / Work scope and power-stage identity

ABB NGDR-07C-NGDR-07-FF650R17IE4 is supplied with the NGDR driver board and FF650R17IE4 power module for converter power-stage service.

Control path and power path

Gate control	NGDR-family circuitry amplifies IGBT control pulses. Retain the installed gate and emitter wiring arrangement.
Power switching	FF650R17IE4 is the included semiconductor module. Its component ratings do not define the complete converter output.
Assembly acceptance	Compare both board and semiconductor markings, revisions and converter service records before replacing the assembly.

Qualified electrical service

Use the converter isolation and discharge procedure before opening the power stage. Verify the absence of hazardous voltage using the approved method; do not rely on an extinguished display as proof that the DC link is discharged.

Purpose of this guide

This preparation guide supports identification and replacement checks. The converter service instructions govern wiring, torque, insulation tests and controlled commissioning.

Product and installation enquiries

sales13@apterpower.com | +86 18030235313

Apply manufacturer instructions and approved site procedures.

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02 / Pre-installation readiness

Complete marking	Match NGDR-07C-NGDR-07-FF650R17IE4 with the offered item and installed assembly record.
Board interface	Compare control connectors, gate/emitter paths, board revision and installed protection connections.
Semiconductor identity	Verify FF650R17IE4 and its package against the approved converter arrangement.
Cooling and mounting	Inspect the heat-transfer surface, mounting points and cooling equipment. Use the applicable module instructions for the thermal interface.
Harness and insulation	Check connector condition, conductor routing and insulation clearances before restoring power.

Separate component and converter limits

The module voltage and current ratings apply to the semiconductor under specified conditions. They are not the driver-board supply rating, drive output rating or permission to raise converter settings.

Mismatch decision

If a marking, interface or thermal arrangement differs, stop the substitution and resolve the configuration with the responsible drive-service engineer.

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03 / Replacement sequence

1 / Isolate and identify	Establish the approved electrical work boundary; record the original board, module and connection positions.
2 / Document connections	Label the gate/emitter wiring and control harnesses before disconnection. Keep the protection path identifiable.
3 / Inspect removed hardware	Check for heat damage, damaged terminals and contamination. Investigate the initiating failure before fitting a replacement.
4 / Restore mechanical interfaces	Prepare the mounting surface and thermal interface under the applicable converter and module instructions.
5 / Restore electrical interfaces	Reconnect the original approved wiring, check clearances and inspect for unsupported mechanical loads.

ESD and mechanical handling

Use ESD-safe handling for the driver board. Protect the module terminals and board connectors from twisting, contamination and unsupported cable forces.

Before enclosure closure

Verify fastening, cable routing, cooling connections and the absence of loose parts. Record any deviation from the original arrangement before proceeding.

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04 / Commissioning and acceptance

Connection review	Compare gate/emitter and control wiring with the applicable drive configuration. Resolve any polarity or interface uncertainty before power is applied.
Thermal readiness	Confirm that the mounting and cooling arrangement are restored and the thermal interface follows the approved instructions.
Protection review	Restore the original protection circuit and approved settings. Do not bypass a fault indication to force a test.
Controlled test	Use the converter commissioning sequence and acceptance limits for the actual installation.
Release record	Retain both component identities, relevant test results and the engineer release record.

Interpret diagnostics in context

A gate-drive fault may involve the board, power module, harness, supply or protection path. Inspect the complete affected circuit rather than replacing parts based only on an alarm label.

Ratings are not setpoints

Semiconductor absolute or nominal ratings are not commissioning targets. The converter design determines permissible duty, switching conditions and thermal operating margin.

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05 / Maintenance and technical references

Repeated power-stage trip	Review the fault history, load duty, cooling, gate wiring and installed protection arrangement.
Visible thermal damage	Investigate the thermal path and electrical stress before returning the converter to service.
Different board or module revision	Resolve the complete replacement configuration before approving the substitution.

Technical basis

ABB ACA 6xx hardware manual, 3AFY 63700118 R0125, revision E; Infineon FF650R17IE4 product information.

Other ABB drive references

ABB NDCU-33CX 3AUA0000052751

ABB RINT-5521C 3AUA0000016016E

ABB SDCS-COM-5 3BSE006567R1

Portfolio navigation only. These products are not confirmed substitutes, compatible companions or included accessories for this assembly.

Handover

Retain the complete assembly identity, installation record and accepted test results with the converter maintenance file.

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