ABB DSQC604 3HAC12928-1

01 Product architecture

Product role

ABB DSQC604 3HAC12928-1 supplies the control-power circuits in the applicable IRC5 controller. A DCOK indicator provides a local view of the supply condition.

Operating context

The control supply is distinct from the customer I/O and drive-system supplies in the IRC5 cabinet. Its diagnosis depends on both input conditions and connected load. The voltage windows used in the troubleshooting sequence are diagnostic criteria; they are not a substitute for a rated-input or rated-output specification.

Function map

01	Cabinet AC path
02	DSQC604 control supply
03	DC output loads
04	Controller electronics

Key capabilities

Capability 1
Provides separately connected DC output paths.

Capability 2
Uses a green DCOK indication during normal supply operation.

Capability 3
Requires a minimum load on at least one DC output.

Capability 4
Allows output-by-output checks while a sufficient load remains connected.

System integration

A pulsing indicator can result from disconnected loads or an output short circuit. Fault isolation should distinguish the supply itself from the wiring and downstream units before a replacement is selected.

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02 Technical data and interfaces

Principal technical data

Parameter	Value
Controller platform	IRC5
Input diagnostic range	172 V < U < 276 V
Output diagnostic range	+24 V < U < +27 V
Minimum connected load	0.5-1 A on at least one DC output
Status indication	DCOK LED
Normal DCOK state	Steady green

Additional engineering data

Item	Value or condition
DCOK steady green	Supply normally working; confirm output measurements
DCOK pulsing green	Possible missing load or output short circuit
DCOK off	Possible input deficiency, supply fault or indicator fault
Required diagnostic load	0.5-1 A on at least one DC output
Output diagnostic window	24 V < U < 27 V
Input diagnostic window	172 V < U < 276 V
Service connectors	X1-X4

How to apply these data

Use a voltmeter, resistance measurement equipment and a suitable connected load for the diagnostic task. Resistance checks are performed only in the isolated, de-energized condition. When measuring outputs in the approved energized procedure, retain the required load on at least one output. Do not unload every output and then interpret the resulting pulse behavior as a new failure.

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03 Integration and application

Interface map

Interface	Purpose	Engineering note
AC input	Input to the control power supply.	Use the cabinet circuit allocation to identify the measurement points.
DC outputs	Supply the connected control units.	At least one output requires a 0.5-1 A load during diagnosis.
DCOK	Status LED used together with electrical measurements.	A pulsing indication is not by itself proof of failed hardware.
Mounting and X1-X4	Control-supply attachment and connection set.	Preserve connector assignments during removal and refitting.

Application contexts

Control-module power
Supply the low-voltage control circuits of the matched IRC5 cabinet.

Multiple-unit supply diagnosis
Separate a shared supply fault from a faulty connected unit.

No-start investigation
Check control power when the controller lacks normal status indications.

Power-supply replacement
Restore the assigned control-supply position while retaining its output connections.

Integration constraint

Separate a no-load indication from a shorted downstream circuit. The input and output figures above are troubleshooting windows, not a declaration of absolute electrical ratings.

Commissioning record

Retain measured input and output voltages, the connected load during testing and DCOK behavior. Keep these together: a voltage measurement without its load condition is incomplete evidence. Record any downstream short circuit or upstream cabinet-feed fault corrected during diagnosis.

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04 Engineering decisions

Diagnostic decisions

DCOK pulsing
Check connected loads and output short circuits. An unloaded supply may produce the same symptom as a fault.

Output voltage correct, LED off
Record a possible indication defect. Do not equate an unlit LED with zero output.

Output wrong, input outside diagnostic window
Trace the cabinet input path and connections. Resolve the supply path before condemning the DC unit.

Short circuit at a connected unit
Identify and repair the affected load circuit. Retest the supply with the required load connected.

Product precautions

01
Disconnect mains before disconnecting or replacing the power supply.

02
Inspect FlexPendant errors and warnings before fault isolation.

03
Do not assume a pulsing DCOK LED proves an internal supply failure.

04
Maintain a 0.5-1 A load on at least one DC output during the specified voltage test.

05
Check downstream circuits for shorts before reconnecting the supply.

06
Use the 172-276 V input window as a diagnostic criterion for this procedure.

07
Check each output against the +24 to +27 V diagnostic window.

08
Restore all output connections and confirm stable control operation after replacement.

Important notice

Measure the supply under the required load before interpreting a pulsing DC OK indicator.

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05 Questions and functional acceptance

Product-specific engineering questions

What can a pulsing green DCOK LED on ABB DSQC604 3HAC12928-1 mean?
The supply may have no connected load or a short circuit on an output; inspect the connected circuits before condemning the supply.

Why should ABB DSQC604 3HAC12928-1 remain loaded during an output-voltage test?
It requires 0.5-1 A on at least one DC output to operate correctly, so an entirely unloaded test can give a misleading result.

Product-specific engineering questions (continued)

Which output readings are expected during troubleshooting of ABB DSQC604 3HAC12928-1?
The voltage-check procedure expects each tested output to be above +24 V and below +27 V while the required load remains connected.

Does an unlit DCOK LED always require immediate replacement of ABB DSQC604 3HAC12928-1?
No. If all outputs remain at the correct voltage, the indicator condition still indicates a fault, but the troubleshooting procedure does not require instant replacement solely for that condition.

Product-specific engineering questions (continued)

How should a suspected short circuit around ABB DSQC604 3HAC12928-1 be localized?
With power safely isolated, check both the supply outputs and the inputs of surrounding units, distinguishing a shorted load from a fault inside the supply.

Related catalogue pages

ABB DSQC609-3HAC14178-1

ABB 3HAC025466-001

ABB 3HAC029105-002

Technical basis

ABB 3HAC020738-001 Rev. K, DSQC604 troubleshooting; ABB 3HAC021313-001 Rev. P, control-supply replacement