

ABB DSQC363 3HAC1462-1

01 Scope and system boundary

Installed function

ABB DSQC363 3HAC1462-1 is a robot computer for S4C controllers using BaseWare 3.0 or 3.1. It coordinates I/O, axis control, serial communication and teach-pendant communication. The robot computer controls the early startup decision: it performs preliminary diagnostics before allowing the main computer to run. This sequence explains why a stopped controller can appear to have a main-computer problem when the blocking fault is earlier in the chain. Both warm and cold starts pass through this stage.

Functional sequence

01	Cold / warm start
02	Robot-computer tests
03	Main-computer release
04	Controller operation

Before work starts

Check	Technical purpose
Software boundary	Retain BaseWare 3.0 or 3.1 for this robot computer. RobotWare 3.2 is incompatible with DSQC363; attempting a cold boot can corrupt the flash state and prevent normal recovery.
Cabinet isolation	Disconnect controller power before handling the computer rack. Externally powered circuits may remain live after the controller mains switch is opened, so identify and isolate every affected circuit.

Isolation and handling

When the controller remains stopped and the red robot-computer fault light is on, investigate this startup stage before replacing the main computer.



ABB DSQC363 3HAC1462-1

02 Connections and readiness

Interface preparation

Interface	Function	Check
SIO1	Serial connection position.	Keep its original harness identification.
SIO2	Separate serial connection position.	Do not exchange serial connections during refitting.
CAN	Controller communication connection.	Assess network status independently from board initialization.
Teach pendant / I/O / axes	Functions handled through the robot computer.	Successful main-computer startup is only one part of the functional test.

Engineering considerations

Preserve the installed BaseWare 3.0 or 3.1 configuration during service. A DSQC363 cold boot with RobotWare 3.2 can overflow the flash memory and require special recovery equipment. This is a specific software boundary, not a routine configuration warning. Do not use a software upgrade as an unverified troubleshooting shortcut.

Relevant setup data

Item	Value or condition
Startup order	Robot computer starts before main computer
Restart modes	Cold and warm start both run preliminary tests
Memory behavior	Read/write memory is battery-backed
Supported software	BaseWare 3.0 / 3.1



ABB DSQC363 3HAC1462-1

03 Installation and replacement

Work sequence

01	Software boundary
02	Cabinet isolation
03	Board and connection handling
04	Startup observation
05	Fault discrimination
06	Functional handover

Execution details

Stage	Action and reason
Board and connection handling	Use grounded ESD protection. Identify the SIO1, SIO2 and CAN connections before disconnection and preserve their original assignments. Protect connector contacts during removal and refitting.
Startup observation	The robot computer is the first unit to start after a cold or warm restart. Observe its red fault indicator and the initialization sequence before assessing whether the main computer has been released.
Fault discrimination	A red fault indication combined with a controller that will not start points toward the robot-computer test stage. Correlate the indicator with the controller messages and supply state; do not infer a main-computer fault solely from the lack of motion.
Functional handover	After successful startup, check the communication paths that depend on the robot computer: system I/O, serial traffic and the teach pendant. Test the configured axis-control operation under the approved maintenance conditions before releasing the cell.

Before energization

Confirm that the installed BaseWare version is 3.0 or 3.1. Do not cold-boot this robot computer with RobotWare 3.2. Isolate the controller supply before removing a board. Treat externally supplied cabinet circuits separately from the mains switch.



ABB DSQC363 3HAC1462-1

04 Commissioning and fault isolation

Functional acceptance

Test	Action	Expected result
Initialization	Observe the robot-computer fault indication through startup.	Preliminary diagnostics complete before main-computer release.
Pendant	Check the controller/pendant communication path.	The intended operator interface communicates.
I/O and serial	Test the configured paths independently.	Signals and serial functions match the retained configuration.
Axes	Perform the approved controlled axis-function test.	The axis-control function is restored before production release.

Interpret the symptom

Observation	Investigation	Decision boundary
Red fault indicator and no startup	Assess the robot-computer preliminary test stage first.	The main computer may not yet have been released.
Warm restart still fails	Review the same preliminary diagnostic stage.	A warm restart does not bypass these tests.
Planned RobotWare 3.2 cold boot	Stop and resolve hardware/software compatibility.	DSQC363 is not the supported robot computer for this upgrade.
Startup succeeds but a communication path fails	Inspect the affected serial, CAN, pendant or I/O connection.	A passed startup does not prove every external communication function.

Controlled return to service

Keep the BaseWare level, computer identity, startup observations and the original SIO1/SIO2/CAN assignments. Record separately whether initialization, pendant communication, system I/O and axis control passed. This separates the cause of a future restart failure from a downstream application fault.



ABB DSQC363 3HAC1462-1

05 Technical checks and handover

Questions that affect the work

Why can ABB DSQC363 3HAC1462-1 prevent the main computer from starting?

The robot computer runs first and releases the main computer only after its preliminary diagnostics have passed.

What happens if ABB DSQC363 3HAC1462-1 is cold-booted with RobotWare 3.2?

RobotWare 3.2 is not supported and can overflow the robot-computer flash memory, requiring special recovery equipment.

Does a warm restart bypass ABB DSQC363 3HAC1462-1 startup tests?

No. The robot computer starts first after both cold and warm starts and performs its preliminary diagnostic sequence.

How is read/write memory retained on ABB DSQC363 3HAC1462-1?

The robot computer uses battery-backed read/write memory.

Final checks

Check	Requirement
1	Use grounded ESD protection while handling the circuit board.
2	Keep SIO1, SIO2 and CAN connections identified during removal.
3	Observe the red fault indicator through initialization after reassembly.
4	Check the pendant, I/O and axis-control functions before restoring production.

Related catalogue pages

[ABB DSQC325 3HAB2241-1](#)

[ABB DSQC323-3HAB5956-1](#)

Technical basis

ABB IRB 6400R M99, Troubleshooting Tools pp. 14, 27-28; Fault Tracing Guide p. 5; ABB S4C service notes

