

ABB DSQC373 3HAC3180-1

01 Scope and system boundary

Installed function

ABB DSQC373 3HAC3180-1 is an S4C robot-computer board for BaseWare 3.1 and 3.2 controller configurations. BaseWare 3.1 and 3.2 configurations use this S4C robot-computer board. Its indicator groups provide several independent observations: F covers initialization, MS covers the device, NS covers network state and TxD/RxD show traffic. Reading only one light can confuse a healthy processor with a successfully connected application.

Functional sequence

01	Board initialization
02	MS module state
03	NS network state
04	Application I/O test

Before work starts

Check	Technical purpose
Software preparation	Preserve the controller BaseWare 3.1 or 3.2 configuration and its system parameters before board work. Confirm the required robot-computer hardware before any software upgrade or cold-boot procedure.
Handling and reconnecting	Isolate controller power and any externally powered circuits involved in the task. Use ESD protection, identify the SIO1, SIO2 and CAN positions, and return each connection to its original assignment.

Isolation and handling

An unlit NS indicator can mean either no power or an offline device; read the MS state and supply condition before drawing a network conclusion.



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02 Connections and readiness

Interface preparation

Interface	Function	Check
F	Red initialization indication.	Assess whether initialization is accepted before interpreting network status.
MS	Green/red module-state indication.	Device condition and network connection are different observations.
NS	Green/red network-state indication.	Distinguish online-without-connection from an established link.
TxD / RxD	Yellow transmit and receive indications.	Use traffic evidence alongside status and controller messages.

Engineering considerations

An unlit NS indication is ambiguous by itself because the device may be unpowered or offline. Read the supply and module status before deciding that a network cable has failed. Likewise, steady green MS does not establish that any particular I/O connection is exchanging the expected application data.

Relevant setup data

Item	Value or condition
MS steady green	Normal device operation
MS flashing green	Standby or missing/incomplete/incorrect configuration
MS flashing red	Recoverable minor fault
MS steady red	Unrecoverable device fault



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03 Installation and replacement

Work sequence

01	Software preparation
02	Handling and reconnecting
03	Initialization
04	Module-state assessment
05	Network-state assessment
06	Release criteria

Execution details

Stage	Action and reason
Initialization	After controlled energization, observe the F indicator. It turns off when the board accepts initialization. Assess initialization separately from the subsequent network connection state.
Module-state assessment	Green MS represents normal operation. Flashing green calls for a configuration and message check; flashing red indicates a recoverable minor fault. Persistent red indicates an unrecoverable fault that requires further hardware investigation.
Network-state assessment	Online status alone is insufficient: flashing-green NS has no established connection. Steady-green NS confirms an established connection. Flashing red identifies a timeout; red indicates a communication failure such as duplicate node identity or bus-off.
Release criteria	Check module condition and network connection independently. Resolve configuration and timeout messages, verify the required I/O communications, and test the controller application under the site maintenance procedure before returning the cell to service.

Before energization

Check that the S4C controller uses the intended BaseWare 3.1 or 3.2 configuration. Disconnect the controller supply before accessing the board. Account separately for externally powered cabinet circuits. Use grounded ESD protection during board handling.



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04 Commissioning and fault isolation

Functional acceptance

Test	Action	Expected result
F indication	Observe initialization after controlled energization.	The board accepts initialization.
Module state	Read MS and associated messages.	Normal module operation; configuration faults resolved.
Network state	Read NS and confirm the intended connection.	Established connection with no unresolved timeouts.
Application	Exercise configured I/O and communication functions.	The connected application receives and sends the intended data.

Interpret the symptom

Observation	Investigation	Decision boundary
MS green, NS flashing green	The device runs but has no established connection.	Investigate the configured network relationship.
MS flashing green	Review missing or incomplete configuration and system messages.	Do not treat standby as normal application readiness.
MS flashing red	Investigate the recoverable minor fault.	Retest module operation after correction.
NS flashing red	Locate timed-out I/O connections.	Verify recovery of each affected connection rather than only the board LED.

Controlled return to service

Retain the BaseWare version, system parameters and connector assignments. Record F, MS and NS separately instead of writing only “green light”. Include the affected connection names and application test result so future diagnostics can distinguish board state from network and process behavior.



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05 Technical checks and handover

Questions that affect the work

Is a green module light enough to confirm communication on ABB DSQC373 3HAC3180-1?

No. Green MS indicates normal device operation, while the separate NS indicator shows whether network connections are established.

What distinguishes flashing-green and steady-green NS on ABB DSQC373 3HAC3180-1?

Flashing green indicates an online device without an established connection; steady green indicates an online device with an established connection.

Why does flashing-green MS on ABB DSQC373 3HAC3180-1 call for a configuration check?

The module may have missing, incomplete or incorrect configuration, or may be in standby, so system parameters and messages should be reviewed.

How do red MS indications differ on ABB DSQC373 3HAC3180-1?

Flashing red indicates a recoverable minor fault, while steady red indicates an unrecoverable device fault.

Final checks

Check	Requirement
1	Keep the serial and CAN connectors in their assigned positions.
2	Confirm that the F indication clears after successful initialization.
3	Resolve flashing-green MS configuration conditions before normal operation.
4	Check the NS connection state and controller messages before enabling the cell.

Related catalogue pages

ABB DSQC335 3HAB6182-1

ABB DSQC227 YB560103-BK

Technical basis

ABB IRB 6400R M99, Troubleshooting Tools pp. 14, 27-28; parts list p. 36

