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01 Actuator modes and channel assignment

1 Assign each actuator format

Record the commanded range for every channel, including whether the actuator expects current or voltage. Keep the configured engineering scale with the loop identifier.

2 Select the correct terminals

Trace the field conductors to the current or voltage terminal set. A software range change does not move the physical wiring between the two terminal sets.

Output channels	4, individually isolated
Current ranges	−20…+20 mA; 0–20 mA; 4–20 mA
Voltage ranges	−10…+10 V; 0–10 V; 2–10 V
MTU keying	BC

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02 Load limits for current and voltage

1 Check the current-loop burden

Calculate the combined receiver and cable resistance for each current output. Keep it within 550 ohms and investigate excessive burden before attempting a full-scale test.

2 Check voltage-input impedance

Verify that each voltage receiver presents at least 5 kilohms. Include parallel test instruments in the effective load when measuring the output voltage.

Current output load	≤550 Ω
Voltage output load	≥5 kΩ

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03 Output fallback and supply supervision

1 Configure the predetermined state

Set the OSP behavior to the approved process response for each actuator. Evaluate the mechanical outcome before deliberately causing an error condition during testing.

2 Verify field-power supervision

Check the field supply and the ModuleBus diagnostic response in a controlled maintenance state. Distinguish a missing power supply from a valid zero output command.

Update cycle	≤1.5 ms
Rise time	<0.7 ms

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04 Range endpoints and open-loop response

1 Test both ends of the range

Apply controlled low and high commands for each configured range and measure the actuator signal. Preserve sign when testing bipolar current or voltage operation.

2 Assess loop-open detection

For a current channel, perform an approved open-loop test with a command above 1 mA. Restore the connection and verify normal diagnostics before returning the loop to automatic control.

Resolution	12 bits including sign
Voltage output error	0.1% maximum
Current output error	0.1% typical at 250 Ω; 0.15% maximum

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05 MTU conditions and commissioning record

1 Review thermal and MTU conditions

Confirm the BC keying and the selected compatible MTU. Apply the 40 °C maximum where the module is mounted vertically with a compact MTU.

2 Record the four-channel results

Retain command scaling, signal mode, terminal assignment, load, measured output and OSP behavior for each channel. Resolve a channel error before releasing the associated actuator.

Technical basis: ABB AO820 Compact Product Suite data sheet.

Related product navigation

ABB AO810V2 3BSE038415R1

ABB AO810 3BSE008522R1

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