B&R X20AI4632

01 Map all four analog channels

1 Record voltage and current terminals

Identify each transmitter and its positive voltage or current terminal. Record the common negative terminal separately. Use the four-channel X20TB12 layout so that a current lead is not returned to a voltage input during replacement.

2 Preserve shared reference conditions

Measure relevant field potentials before reconnecting. The module has bus isolation but no channel-to-channel isolation, and the common-mode range is +/-12 V; separate isolated transmitters do not make the input channels independently isolated.

Channels	Four differential inputs
Voltage terminals	+/-10 V
Current terminals	0 to 20 mA

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02 Protect measurement quality

1 Allow spacing from noisy modules

Compare the station order with the connection guidance. Leave at least one intervening module between this input module and the specified controller, bus receiver or power-supply modules before troubleshooting apparent analog instability.

2 Terminate unused channels correctly

Check which channels are unused and apply the recommended bridge or current configuration to reduce dissipation. Do not leave an unused channel driving a threshold alarm or an application calculation.

Hardware filter	10 kHz low-pass
Bus power	0.01 W
I/O power	1.5 W

03 Restore filtering and scaling

1 Reapply individual input filters

Restore the filter assigned to each channel rather than copying one setting across all four. Fast transients and slowly varying process signals can need different filtering even when their electrical ranges are the same.

2 Confirm engineering-unit conversion

Apply a known input within the selected range and compare raw INT data with the scaled engineering value. Check sign, zero and full scale separately for voltage and current channels.

Voltage raw range	0x8001 to 0x7FFF
Current raw range	0x0000 to 0x7FFF

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04 Validate four-channel acquisition

1 Test simultaneous signal changes

Apply controlled changes to the channels involved in a timing comparison. Check the application sampling cycle alongside the 50 microsecond conversion interval; a fast converter cannot correct a slow application update.

2 Use diagnostics by signal type

Inspect run/error and channel states after the test. Interpret an open-line indication only in voltage mode, and use an external loop check when verifying an open current circuit.

Conversion	50 microseconds, all inputs
Input diagnostics	LED and software
Channel type	Software diagnosis

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05 Retain a meaningful trace

1 Set an event-specific capture

Choose trace sampling and triggering to capture the actual process event. Retain the input range, filter and scaling with the trace so that later comparisons use the same signal interpretation.

2 Review limit and overload behavior

Exercise the configured threshold with a controlled signal and verify the intended application response. Distinguish user-defined limit events from converter range overshoot and synchronization errors before returning the inputs to control.

Technical basis: B&R X20AI4632 Data sheet V3.21.

Related product navigation

B&R X20SL8000

B&R X20BC8084

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