B&R X20AI4222

01 Four voltage inputs and common mode

Assign all four voltage channels

Record the source, polarity and controller variable for each ±10 V input. Keep the positive and negative conductor of each differential pair together.

Check the common-mode condition

Assess the source reference against the ±12 V common-mode range. Differential measurement does not permit an unrestricted voltage offset to the module reference.

Inputs	4 differential voltage channels
Measurement range	±10 V
Common-mode range	±12 V

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02 X20 terminals and source impedance

Fit the correct X20 connection set

Use the compatible bus module and X20TB12 terminal arrangement. Label the four pairs before moving the terminal block to prevent channel interchange.

Inspect the source loading

Check the source with the 20-megohm input impedance and the installed cable. Resolve wiring defects before changing filtering to conceal an unstable signal.

Input impedance	20 MΩ
Channel-to-bus test voltage	500 V RMS
Channel-to-channel isolation	None

03 Digital filtering and ramp limitation

Select the digital filter

Retain the approved filter setting and a cycle time greater than 500 µs when filtering is required. Shorter cycles disable this filtering function.

Tune ramp limiting deliberately

Use ramp limiting only with the digital filter and select the limit for the real process. Excessive limiting can suppress a valid rapid input change as well as noise.

Conversion time	400 µs for all inputs
Analog filter	Third-order low-pass, 1 kHz cutoff

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04 Bipolar signal and channel indication

Test positive and negative values

Inject controlled values across the bipolar range and confirm the controller's signed engineering values. Include zero and both polarities in the test.

Check each input indication

Compare the input LEDs and software diagnostics with connected, open and out-of-range test conditions. Perform fault tests only in the approved process state.

Converter resolution	13 bits including sign
Maximum input signal	±30 V
Internal I/O consumption	1.1 W
Bus consumption	0.01 W

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05 Operating orientation and retained settings

Confirm orientation and temperature

Check whether the module is horizontal or vertical and apply the corresponding ambient limit. Keep the station enclosure and ventilation within the intended conditions.

Save the four-channel behavior

Retain the channel map, polarity, filter and ramp settings, diagnostics and measured response. Verify that the application receives the intended filtered signal before release.

Technical basis: B&R X20AI4222 Data Sheet, V1.30.

Related product navigation

B&R X20SL8000

B&R X20DO8332

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