B&R X20AI2222

01 Two-input assignment and X20 terminals

1 Choose the two-channel mapping

Identify the two voltage sources and the associated application variables. Keep the signed scaling and polarity with the connection record.

2 Select the terminal block

Use the intended X20TB06 or permitted X20TB12 arrangement. Compare the actual input pin allocation rather than assuming all terminal positions are active.

Inputs	2 differential voltage channels
Terminal options	X20TB06 or X20TB12

X20AI2222

02 Differential wiring and unused channels

1 Verify signal and reference wiring

Trace each positive and negative input conductor and check the source common-mode condition. The channels share their input-side isolation boundary.

2 Treat unused inputs correctly

Bridge any unused input at the terminal according to the applicable wiring guidance. Do not leave its diagnostic state unexplained in the application.

Input range	±10 V
Input impedance	20 MΩ

03 Signed values and filtered timing

1 Set the signed conversion scale

Use the signed INT representation and the 2.441 mV converter increment when checking raw values. Do not interpret every data-word count as one ADC increment.

2 Review filtered sampling timing

Allow for millisecond sampling and the 200 µs interchannel offset when comparing changing signals. Avoid assuming simultaneous samples from two matching displayed values.

ADC resolution	13 bits including sign
Value format	Signed INT
Converter increment	2.441 mV; data-word step 8
Interchannel sample offset	200 µs when filtering

X20AI2222

04 Step response and filter update interval

1 Apply a known input step

Use a controlled step within ±10 V and observe the reported response. Compare the result with the configured filter and ramp-limiting behavior.

2 Check the minimum filter cycle

Confirm that the cycle time exceeds 500 µs if the digital filter is required. Resolve a disabled filter through configuration rather than replacing a functioning module.

Conversion time	300 µs for both inputs
Digital-filter sample interval	1 ms when enabled
Internal I/O consumption	0.8 W
Bus consumption	0.01 W

X20AI2222

05 Polarity checks and retained configuration

1 Test polarity and channel identity

Apply positive, zero and negative values to one channel at a time. Confirm that only the intended signed application variable responds.

2 Retain the two-input setup

Save terminal type, used and bridged channels, signed scaling, filter settings and response measurements. These details preserve the intended behavior after future replacement.

Technical basis: B&R X20AI2222 Data Sheet, V1.30.

Related product navigation

B&R X20CP3585

B&R X20AI2237

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