

B&R X20AI2437

Analog Input Module

B&R; X20AI2437 measures two current channels over selectable 4 to 20 mA or 0 to 25 mA ranges with 16-bit conversion. Each channel has an isolated sensor supply and supports NetTime measurement timestamps for synchronized acquisition.

IDENTITY	VERIFIED VALUE
Manufacturer	B&R;
Complete model	B&R; X20AI2437
Product role	Analog Input Module
System family	X20 System
Country of origin	Austria

DOCUMENT SCOPE

Exact identity, manufacturer-supported technical data, installation checks, applications, precautions and controlled verification records.

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B&R X20AI2437

Technical Specifications

PARAMETER	VERIFIED VALUE
Analog inputs	2 current measurement channels
Measurement ranges	4 to 20 mA or 0 to 25 mA
Converter resolution	16 bit
Sensor supply	One isolated supply per channel
Sensor supply voltage	25 V $\pm$ 2%
Sensor supply current	30 mA maximum per channel
Sensor supply short circuit	Continuous protection with current limiting
Electrical isolation	Channel-to-channel and channel-to-bus
Bus power consumption	0.05 W
Internal I/O power	1.15 W
B&R; ID code	0xB784
Protection rating	IP20
Operating temperature	-25 to 60 C horizontal; -25 to 50 C vertical
Required hardware	X20TB12 with X20BM11 or X20BM15

Model-Specific Engineering Note

ENGINEERING BOUNDARY

Install B&R; X20AI2437 with X20TB12 and X20BM11 or X20BM15, then configure the range for each channel. Verify sensor-supply polarity, loop current, isolation, timestamp behavior and the configured diagnostic response before release.

Pre-Installation Checks

NO.	REQUIRED CHECK
1	Verify the complete B&R; X20AI2437 marking and assigned channel numbers before work.
2	Place both process loops and their controlled equipment in the approved maintenance state.
3	Use X20TB12 with X20BM11 or X20BM15 and confirm terminal coding before insertion.
4	Record whether each channel is configured for 4 to 20 mA or 0 to 25 mA.
5	Check transmitter polarity and keep loop current within the selected measuring range.

System Role and Architecture

B&R; X20AI2437 measures two current channels over selectable 4 to 20 mA or 0 to 25 mA ranges with 16-bit conversion. Each channel has an isolated sensor supply and supports NetTime measurement timestamps for synchronized acquisition.

FUNCTION 1

Acquires two industrial current loops with independent range selection

FUNCTION 2

Supplies each connected transmitter from its own isolated 25 V source

FUNCTION 3

Converts current signals with 16-bit digital resolution

FUNCTION 4

Associates measurement timing with the documented NetTime function

Common Applications

APPLICATION	ENGINEERING CONTEXT
Two-wire transmitter acquisition	B&R; X20AI2437 powers and reads two isolated process transmitters in an X20 station.
Synchronized current measurement	NetTime identifies the measurement instant for controller-side correlation with other signals.
Mixed current-range retrofit	Each channel can use the documented 4 to 20 mA or 0 to 25 mA range required by the installed loop.
Isolated process monitoring	Channel-to-channel isolation limits unwanted coupling between independently powered field loops.

CONTROLLED ACCEPTANCE DUTY

Confirm identity, physical interface, companion hardware, configured values and functional response against the installed-system record before release.

Engineering Precautions

NO.	PRECAUTION
1	Verify the complete B&R; X20AI2437 marking and assigned channel numbers before work.
2	Place both process loops and their controlled equipment in the approved maintenance state.
3	Use X20TB12 with X20BM11 or X20BM15 and confirm terminal coding before insertion.
4	Record whether each channel is configured for 4 to 20 mA or 0 to 25 mA.
5	Check transmitter polarity and keep loop current within the selected measuring range.
6	Do not parallel the isolated sensor supplies or unintentionally common the field loops.
7	Prove sensor-supply short-circuit diagnostics and restore the loop without persistent fault.
8	Compare both measured currents and NetTime behavior with controlled reference signals before release.

Model-Specific FAQ - Part 1

QUESTION	ANSWER
Which current ranges can B&R; X20AI2437 measure?	Each channel can be configured for either 4 to 20 mA or 0 to 25 mA operation.
How are the two B&R; X20AI2437 channels isolated?	B&R; specifies channel-to-channel isolation and isolation between each channel and the bus; the sensor supply remains associated with its channel.
Can B&R; X20AI2437 power two-wire transmitters directly?	Yes. Each channel includes its own isolated nominal 25 V sensor supply rated up to 30 mA.
What happens if a B&R; X20AI2437 sensor supply is shorted?	The supply is continuously short-circuit proof and limits current, while diagnostics report the sensor-supply condition.

Model-Specific FAQ - Part 2

QUESTION	ANSWER
What does the NetTime function add to B&R; X20AI2437?	It provides the measurement time reference so acquired values can be correlated with other time-aware controller events.
Which accessories are mandatory for B&R; X20AI2437?	The product page requires one X20TB12 terminal block and one X20BM11 or X20BM15 bus module.
What temperature limits apply to B&R; X20AI2437?	Operation is specified from -25 to 60 C horizontally and -25 to 50 C vertically.
How should B&R; X20AI2437 be accepted after replacement?	Inject known currents on both channels, verify range scaling, sensor supplies, diagnostics, channel isolation and the configured timestamp behavior.

Related Products on Apter Power

MODEL	APTER POWER PAGE
GE 0552N1QLG132A-06-V1-1	View GE 0552N1QLG132A-06-V1-1 page
GE 151X1202YE03SA04-IS200 STAIH2ADC	View GE 151X1202YE03SA04-IS200STAIH2ADC page
GE 151X1225DF01PC03RA	View GE 151X1225DF01PC03RA page
GE 151X1233DB02SA02	View GE 151X1233DB02SA02 page
GE 151X1235BC01SA41	View GE 151X1235BC01SA41 page
GE 269PLUS-100P-120	View GE 269PLUS-100P-120 page
GE 531X111PSHAPG3	View GE 531X111PSHAPG3 page
GE 531X111PSHARG1	View GE 531X111PSHARG1 page

MANUFACTURER SOURCE RECORD

Data sheet X20AI2437
B&R; version 1.40, 2025-07-31

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