

B&R X20AT2222

Temperature Input Module

B&R; X20AT2222 measures two Pt100 or Pt1000 resistance-temperature channels with internal linearization and configurable filtering. Each channel supports direct 2-wire or 3-wire sensor connection for X20 temperature acquisition.

IDENTITY	VERIFIED VALUE
Manufacturer	B&R;
Complete model	B&R; X20AT2222
Product role	Temperature 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 X20AT2222

Technical Specifications

PARAMETER	VERIFIED VALUE
Temperature channels	2
Sensor types	Pt100 or Pt1000, configurable per channel
Temperature range	-200 to 850 C
Connection	2-wire or 3-wire constant-current measurement
Converter	16-bit sigma-delta
Temperature resolution	0.1 C
Filter time	1 to 66.7 ms configurable
Resistance ranges	0.1 to 4500 ohm or 0.05 to 2250 ohm
Isolation	500 Veff between channel and bus
B&R; ID code	0x1BA6
Required terminal block	X20TB06 or X20TB12
Required bus module	X20BM11 or X20BM15

Model-Specific Engineering Note

ENGINEERING BOUNDARY

Wire B&R; X20AT2222 with the selected 2-wire or 3-wire scheme and set the sensor type independently for each channel. Verify lead resistance, open-circuit diagnostics, filter time and a controlled temperature point before acceptance.

Pre-Installation Checks

NO.	REQUIRED CHECK
1	Verify X20AT2222 and both RTD channel assignments before disconnecting sensors.
2	Record whether each channel is configured for Pt100 or Pt1000.
3	Preserve the selected 2-wire or 3-wire wiring method and terminal numbering.
4	Use X20TB06 or X20TB12 with X20BM11 or X20BM15 as documented.
5	Route low-level RTD conductors away from switching and motor cables.

System Role and Architecture

B&R; X20AT2222 measures two Pt100 or Pt1000 resistance-temperature channels with internal linearization and configurable filtering. Each channel supports direct 2-wire or 3-wire sensor connection for X20 temperature acquisition.

FUNCTION 1
Linearizes two resistance-temperature channels inside the module

FUNCTION 2
Lets each channel select Pt100 or Pt1000 independently

FUNCTION 3
Flags open circuits and range faults through defined diagnostic values

FUNCTION 4
Adapts measurement response with a configurable digital filter

Common Applications

APPLICATION	ENGINEERING CONTEXT
Machine bearing temperature	B&R; X20AT2222 converts two installed RTDs into controller temperature values for monitoring.
Heater-zone feedback	Independent sensor selection supports two Pt100 or Pt1000 control points in an X20 station.
Process skid RTD acquisition	Two- or three-wire connections accommodate documented field-sensor wiring.
Temperature diagnostic retrofit	Open-circuit and range codes help distinguish wiring faults from valid process temperatures.

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 X20AT2222 and both RTD channel assignments before disconnecting sensors.
2	Record whether each channel is configured for Pt100 or Pt1000.
3	Preserve the selected 2-wire or 3-wire wiring method and terminal numbering.
4	Use X20TB06 or X20TB12 with X20BM11 or X20BM15 as documented.
5	Route low-level RTD conductors away from switching and motor cables.
6	Set the filter time for the required response and mains-noise rejection.
7	Check open-circuit and range diagnostic behavior before enabling temperature interlocks.
8	Compare both channels with a traceable resistance or temperature reference after installation.

Model-Specific FAQ - Part 1

QUESTION	ANSWER
Can B&R; X20AT2222 mix Pt100 and Pt1000 sensors on the same module?	Yes. B&R; states that the sensor type is configurable per channel, so the two channels can be assigned independently.
Which wiring methods are accepted by B&R; X20AT2222?	The module performs constant-current resistance measurement with either 2-wire or 3-wire connections.
How does B&R; X20AT2222 report an open Pt sensor circuit?	For temperature measurement it returns 0x7FFF; the resistance-measurement format uses 0xFFFF.
What temperature span is linearized inside B&R; X20AT2222?	Both Pt100 and Pt1000 are normalized from -200.0 to 850.0 C according to EN 60751.

Model-Specific FAQ - Part 2

QUESTION	ANSWER
Which filter adjustment controls B&R; X20AT2222 response time?	The filter time is configurable from 1 ms to 66.7 ms, allowing the project to balance noise rejection and response.
How long does B&R; X20AT2222 need for two channels with a 50 Hz filter?	The official data lists 80 ms conversion time for two channels, compared with 20 ms for one channel.
What resistance ranges are available from B&R; X20AT2222?	Gain 1 covers 0.1 to 4500 ohm and gain 2 covers 0.05 to 2250 ohm.
How should B&R; X20AT2222 channel accuracy be checked after rewiring?	Apply traceable resistance values to each configured channel, confirm the 0.1 C resolution, and verify that open-circuit and overrange diagnostics operate correctly.

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
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GE 531X111PSHARG1	View GE 531X111PSHARG1 page

MANUFACTURER SOURCE RECORD

Data sheet X20AT2222
B&R; version 3.32, 2024-10-08

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