B&R X20DC4395

01 Function and selected configuration

Product function

B&R X20DC4395 brings position acquisition, pulse counting, timing and PWM generation into a configurable X20 I/O position.

Selected configuration

Eight channels can be assigned to encoder and counter functions, with four channels additionally available as outputs. The module supports two SSI or two ABR encoders, four AB encoders or eight event counters; a mixed configuration must respect the shared terminal allocation.

Functional path

Encoder / pulse	Configured channels	Counter / timer	X20 process data

Input functions	SSI, ABR, AB and event counters
Signal level	24 V asymmetrical
PWM	Four outputs with 0.1% pulse-duration resolution

The 24 V asymmetrical encoder inputs support incremental signals up to 100 kHz. SSI communication uses Gray or binary coding at up to 125 kbit/s, with the encoder supply provided internally and protected against overload and short circuit.

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02 Technical operating envelope

Module supply	24 VDC -15% / +20%
SSI encoder capacity	2 absolute encoders
ABR encoder capacity	2 incremental encoders
AB encoder capacity	4 incremental encoders
Event counter capacity	8 counters
PWM outputs	4
Encoder input level	24 V asymmetrical

Incremental input frequency	100 kHz maximum
Counter size	16 or 32 bit
Encoder supply	Module internal, 600 mA maximum
Bus power consumption	0.01 W
Internal I/O power	1.5 W
Protection rating	IP20

SSI transfer rate and incremental pulse frequency are different limits. Counter capacity depends on the selected 16-bit or 32-bit function.

Signal interpretation

The encoder supply supports a maximum 600 mA. The bus is isolated from the field circuitry, but field outputs and encoders are not mutually isolated.

Interface boundary

Use shielded signal lines. The four outputs have 0.1 A nominal current per channel and 0.4 A total nominal current.

What encoder supply is available from B&R X20DC4395?

The internal 24 V encoder supply supports up to 600 mA and is short-circuit and overload protected.

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03 System integration and applications

Absolute position

Two SSI interfaces accept Gray or binary coded encoder positions.

Incremental motion

AB or ABR decoding tracks position and direction from 24 V encoders.

Event timing

Edge-offset, period and gate-time measurements characterize machine events.

Pulse control

PWM outputs drive compatible low-current control inputs.

System and supply context

The module uses the X20 bus and a separate field supply for its encoder and digital interfaces.

Application boundary

Select input and output functions according to the machine signal map; the published function counts cannot all be enabled simultaneously.

What is the maximum incremental input frequency of B&R X20DC4395?

The module accepts a maximum of 100 kHz for the 24 V asymmetrical incremental encoder inputs.

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04 Engineering selection decisions

Which encoder types can B&R X20DC4395 connect?

The module supports two SSI absolute encoders, two ABR encoders, four AB encoders or eight event counters, and the functions can be mixed.

How many PWM outputs does B&R X20DC4395 provide?

Four outputs are available for pulse-width modulation and can be combined with the selected input functions.

Which counter widths are available on B&R X20DC4395?

The module supports 16-bit or 32-bit counter operation according to the configured function.

How should B&R X20DC4395 be accepted after replacement?

Exercise every configured encoder or counter mode, confirm direction and scaling, check timestamps, test PWM outputs and verify diagnostics under controlled motion.

Output loading	Respect 0.1 A per output and 0.4 A total.
Shielding	Use shielded cable on every signal connection.

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05 Configuration boundary and references

Lifecycle and support

The current production and factory-support status of X20DC4395 is unconfirmed.

Replacement assessment

Restore encoder coding, channel functions, count scaling and PWM parameters before enabling the mechanism.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; it does not replace manufacturer instructions.

Technical basis

B&R X20DC4395 Data sheet V3.30.

Related product navigation

- B&R X20CP1485-1
- B&R X20SC0842

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

Product enquiries