Siemens 6ES5734-1BD20

01 RS232-to-TTY Converter Cable

Siemens 6ES5734-1BD20 bridges two different electrical serial interfaces in legacy programming and HMI service connections, where matching the protocol alone does not establish electrical compatibility.



Electrical conversion and protocol selection

The converter bridges RS232 and TTY current-loop signalling. It should not be substituted by a passive pin adapter: changing connector geometry does not convert voltage signalling into a current loop. The connected equipment must support the intended serial protocol as well as the required electrical interface.

Partner-specific connection planning

The connection matrix identifies compatible legacy operator-panel arrangements and distinguishes programming, data communication and operating-system transfer roles. These roles depend on the actual panel and interface. A cable used successfully for one transfer purpose is not automatic evidence that a different panel or firmware-transfer operation is supported.

Service-computer compatibility

The service computer needs a suitable RS232 interface and an appropriate software environment. The S5 programming connection uses the CPU-side 15-pin and PC-side 25-pin arrangement; a 9-pin serial computer port requires the correct adapter. USB-to-serial conversion must be validated with the actual converter and software before relying on it for plant recovery.

Converter identity and HMI connection roles follow ST 80/ST PC; S5 cable-end and workstation details follow Siemens STEP 5 connection guidance.

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02 Ratings, interfaces and applicable limits

Converted interfaces	RS232 / TTY
TTY signalling	20 mA current loop
Cable assembly length	3.2 m
CPU-side connector	15-pin
PC-side connector	25-pin
Conversion architecture	Integrated RS232/TTY converter

Configuration-specific engineering data

PC interface requirement	Serial RS232
9-pin PC port	Correct 25-to-9-pin serial adapter required
USB serial operation	Not guaranteed; validate the actual combination
Partner selection	Panel/CPU-specific communication matrix
Network role	Point-to-point serial connection
Protocol conversion	Not a general-purpose protocol gateway

Applying these values to the complete installation

Converter identity and HMI connection roles follow ST 80/ST PC; S5 cable-end and workstation details follow Siemens STEP 5 connection guidance. RS232-to-TTY conversion is required even when a passive adapter makes connectors fit.

Transfer-role boundary

Programming, data exchange and firmware transfer are separate compatibility checks for the actual target.

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03 Application decisions and system boundaries

01 S5 programming access

Connect a suitable RS232 service computer to the supported S5 TTY programming interface.

02 Legacy panel servicing

Use the connection matrix for the exact OP/TP variant and intended project-transfer role.

03 Serial fault isolation

Separate workstation-port faults from converter, adapter and target-interface faults.

04 Recovery workstation validation

Qualify a reproducible service connection before a scheduled plant outage.

Electrical boundary

RS232-to-TTY conversion is required even when a passive adapter makes connectors fit.

Transfer-role boundary

Programming, data exchange and firmware transfer are separate compatibility checks for the actual target.

Recovery connection

Prove read-only online access before changing a program and retain a known-working workstation configuration.

Replacement boundary: Retain active RS232/TTY conversion and verify the exact target and workstation combination.

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04 Eight questions beyond the specification table

1 Can a passive adapter replace 6ES5734-1BD20 between an RS232 PC and TTY equipment?

No. A passive adapter changes pin connections but not the electrical signal type. Keep the required RS232-to-TTY conversion in the path.

2 Does 6ES5734-1BD20 make an RS485 port compatible with a TTY interface?

No. RS485 is a different electrical interface. Identify the actual port standard before connecting or selecting a converter.

3 Why can 6ES5734-1BD20 connect physically yet fail to transfer a panel project?

Connector fit does not prove protocol, panel variant or transfer-mode compatibility. Check the partner-specific connection matrix and configured serial settings.

4 What must be verified when 6ES5734-1BD20 is used with a 9-pin PC serial port?

Use the correct serial adapter between the 25-pin cable end and the PC port. Confirm the assigned serial port and the adapter wiring before troubleshooting the target.

5 Is a USB-to-serial adapter guaranteed to work with 6ES5734-1BD20?

No. Validate the actual adapter, driver and software combination with the TTY converter before using it as the only recovery connection.

6 Can 6ES5734-1BD20 be treated as an Ethernet programming connection?

No. It is a serial RS232/TTY conversion path. Select the serial interface in the engineering tool and use the intended target protocol.

7 Does successful data communication through 6ES5734-1BD20 prove firmware-transfer support?

No. The permitted transfer roles depend on the operator panel and interface. Check the specific operating-system transfer requirement separately.

8 How should a restored service connection using 6ES5734-1BD20 be tested before downloading a program?

First establish a read-only online connection and confirm target identity and readable diagnostics. Preserve the original application before any authorized write.

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05 Selection boundary and service reference

Identify the offered assembly

Verify the complete converter-cable marking and both serial endpoints. Request available label and connector photos. Have the maintenance team compare the offered 6ES5734-1BD20 with the installed unit and applicable Siemens installation requirements.

Lifecycle and replacement assessment

The current production and manufacturer-support phase for this exact execution is unconfirmed. Retain active RS232/TTY conversion and verify the exact target and workstation combination.

Companion equipment and scope

Confirm PC serial adapter, engineering software and target hardware. A related product is not an automatic substitute; assess the installed interface and application requirements independently.

Engineering handover

Prove read-only online access before changing a program and retain a known-working workstation configuration. Retain the complete hardware identities, approved configuration and accepted test outcome with the installation record.

Related product references

Siemens 6ES7214-1AG40-0XB0

Siemens 6ES7972-0AA01-0XA0

Siemens 6ES7221-1BH32-0XB0

Technical basis: SIMATIC HMI / PC-based Automation Catalog ST 80/ST PC, 2021. Apter Power technical synthesis for this product configuration.