Siemens 6ES5304-3UB11

01 Central Controller Expansion Interface Module

Siemens 6ES5304-3UB11 extends the controller bus through a configured interface pair. Link mode, peer, length and termination must agree before remote I/O can be addressed reliably.

1. S5 controller
2. IM 304 settings
3. Symmetrical cable
4. Receiving rack

Multiplexed S5 bus transmission

The 16-bit address and 16-bit data buses share transmission lines through time-division multiplexing. Control and monitoring signals use their defined paths. Symmetrical transmission corresponds to RS-485 electrical signaling; this is an S5 interface, not a general serial converter.

Receiving-interface selection

Expansion configurations use the specified IM 314 variant, while supported fault-tolerant controller links use the corresponding IM 324 variant. The parallel controller link uses X4. Retain the installed topology rather than selecting a peer by connector fit.

Cable compensation and termination

X11 selects a cable-length band based on the longest X3 or X4 connection. The 450–600 m setting is permitted only for IM 304–IM 324R in S5-155H. Lock the metal connector catches and check end termination before remote-I/O acceptance.

6ES5304-3UB11 uses topology-specific jumper settings. The 450–600 m position is restricted to IM 304–IM 324R in S5-155H.

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02 Ratings, interfaces and applicable limits

Address width	16 bit
Data width	16 bit
Transmission	Time-division multiplexing
Signaling	Symmetrical RS-485
Front connections	2 x 50-pin D-connectors
Backplane connections	2 x 48-pin connectors
Length selection	X11 jumper
Parallel controller link	X4

Configuration-specific engineering data

Length bands	≤10 / 10–100 / 100–250 / 250–450 / 450–600 m
Longest-band restriction	IM 304–IM 324R in S5-155H
Connector retention	Sliding metal catch
Peer	Topology-specific IM 314 / IM 324

Applying these values to the complete installation

6ES5304-3UB11 uses topology-specific jumper settings. The 450–600 m position is restricted to IM 304–IM 324R in S5-155H. Select X11 from the longest actual connection and respect the special upper-band restriction.

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03 Application decisions and system boundaries

01 Distributed S5 expansion

Connect supported remote-rack interfaces to the controller.

02 Fault-tolerant links

Use the correct peer and X4 configuration.

03 Legacy rack maintenance

Preserve jumper, cable and termination assignments.

04 Remote acceptance

Verify application addressing after physical link restoration.

Length qualification

Select X11 from the longest actual connection and respect the special upper-band restriction.

Peer selection

Confirm the required IM 314 or IM 324 variant before wiring.

Remote validation

Verify rack addresses and controlled field responses after restoring the bus.

Replacement boundary: Match the exact variant, peer, jumpers, cable and termination; another IM 304 execution is not automatically interchangeable.

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04 Eight questions beyond the specification table

1 Can the longest length setting on 6ES5304-3UB11 serve every expansion link?

No. The 450–600 m position is restricted to IM 304–IM 324R in S5-155H. Confirm both endpoints and the system.

2 Which cable determines X11 on 6ES5304-3UB11?

Use the longest connection at X3 or X4 and compare its actual route with the permitted band for that topology.

3 Why is a matching peer connector insufficient for 6ES5304-3UB11?

Expansion and redundant-controller links require different variants and modes. Verify the peer identity and jumper pattern.

4 Can 6ES5304-3UB11 serve as a generic RS-485 converter?

No. Its signaling carries defined S5 address, data and control functions. Do not connect unrelated RS-485 devices.

5 What should follow moving a cable between X3 and X4 on 6ES5304-3UB11?

Confirm connector assignment, especially the X4 parallel-link requirement, then recheck jumpers, termination and addressing.

6 How can loose connectors affect the I/O served by 6ES5304-3UB11?

Intermittent bus signals disrupt the remote path. Lock the metal catches and test sustained stability rather than a momentary healthy indication.

7 What must be retained before replacing 6ES5304-3UB11 in a fault-tolerant system?

Record controller roles, peers, link assignments and jumpers. Follow the system maintenance sequence and verify required redundant operation.

8 Why must channel tests follow link restoration on 6ES5304-3UB11?

A working bus does not establish correct application addresses. Exercise known inputs and controlled outputs at the intended remote rack.

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05 Selection boundary and service reference

Identify the offered assembly

Inspect the full order number, jumpers and X3/X4 connectors. Request available label and connector photos. Have your maintenance team compare the offered 6ES5304-3UB11 with the installed equipment and applicable Siemens documents.

Lifecycle and replacement assessment

Discontinued. Existing SIMATIC S5 installations require a configuration-specific maintenance or migration assessment. Match the exact variant, peer, jumpers, cable and termination; another IM 304 execution is not automatically interchangeable.

Companion equipment and scope

Confirm the interface; peers, cables and terminators only when itemized. A related product is not an automatic substitute; assess the installed interface and application requirements independently.

Engineering handover

Verify rack addresses and controlled field responses after restoring the bus. Retain the complete hardware identities, approved configuration and accepted test outcome with the installation record.

Related product references

Siemens 6ES7153-2BA02-0XB0

Siemens 6ES7321-1BL00-0AA0

Siemens 6ES7332-8TF01-0AB0

Technical basis: Siemens SIMATIC S5 IM 304 / IM 314 Instructions, C79000-B8576-C716-02. Apter Power technical synthesis for this product configuration.