Siemens 6SL3120-1TE24-5AA3 SINAMICS S120 Single Motor Module

IDENTITY, COMMERCIAL FACTS AND SPECIFICATION

PRODUCT ROLE

Siemens 6SL3120-1TE24-5AA3 is a SINAMICS S120 booksize Single Motor Module with internal air cooling. It converts the shared DC-link supply into a controlled three-phase motor output for one axis.

OFFERED PRODUCT

Manufacturer part number 6SL3120-1TE24-5AA3	**Shipping** Swift global dispatch	**Condition** New, original product
Shipping size (est.) 49.8cm x 15cm x 26.5cm	**Country of Origin** Germany	**Ship from** Xiamen, Fujian, China

PUBLISHED TECHNICAL SPECIFICATIONS

Manufacturer	Siemens	**Rated power at 600 V DC**	24 kW for typical standard asynchronous motor
Product Category	Servo Drives	**DC-link current**	54 A, rated
Spare Part Number	6SL3120-1TE24-5AA3	**DC-link busbar capacity**	200 A
Weight	9.42 kg	**24 V busbar capacity**	20 A
Tariff Code	8537101190	**24 V electronics demand**	1.2 A maximum
Drive family	SINAMICS S120	**DC-link capacitance**	1,175 uF
Module arrangement	Single Motor Module, booksize	**Power loss, maximum**	460 W at rated power, internal cooling
Cooling	Internal air cooling	**Cooling-air requirement**	0.031 m3/s
DC-link range	510-720 V DC	**Sound pressure at 1 m**	Below 65 dB
Motor output	Three-phase; U2/V2/W2	**Degree of protection**	IP20
Rated output current	45 A	**Motor terminal**	M6 screw studs, X1
Base-load current IH	38 A	**Protective earth**	M6 screw
S6 current, 40% duty	60 A	**Motor brake connector**	X11; 24 V DC, 2 A
Maximum current	85 A	**Motor cable length, shielded**	100 m maximum, published condition
Rated pulse frequency	4 kHz	**Motor cable length, unshielded**	150 m maximum, published condition

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BUYER INFORMATION AND SERVICE CONTEXT

OVERVIEW

Siemens 6SL3120-1TE24-5AA3 is a 45 A SINAMICS S120 booksize Single Motor Module. It draws from the common DC link and supplies a controlled three-phase output to one motor axis.
Module type: Single Motor Module
Rated output current: 45 A; base-load current 38 A
Cooling: Internal air; booksize construction
The Siemens NC 82 catalogue lists a 510-720 V DC-link range, 24 kW typical asynchronous-motor rating at a 600 V link, 60 A S6 current for 40% duty and 85 A maximum current. These values belong to their stated operating conditions; confirm the installed duty cycle and control settings rather than selecting by peak current alone.

The motor connection uses X1 U2/V2/W2 with M6 screw studs and a separate M6 protective-earth point. X11 supplies a 24 V DC, 2 A motor-brake interface. Check terminal hardware, conductor sizing, brake wiring and the machine safety sequence against the approved cabinet drawing.

Internal air cooling requires an unobstructed flow path. The published maximum power loss is 460 W and cooling-air demand is 0.031 m3/s; cabinet thermal assessment must account for the actual load and ambient conditions. The IP20 module also depends on the enclosure for touch protection and environmental shielding.
Controller platform reference: Siemens SINAMICS S120 booksize drive system. Confirm the axis project, DC link and safety configuration for this module.

APPLICATIONS / COMPATIBILITY

System fit: 6SL3120-1TE24-5AA3 belongs to the Siemens SINAMICS S120 booksize drive system and supplies one motor output from the DC link.

Application boundary: The applications below describe system integration roles. Match the exact module marking, control version and machine design before substitution.

Single-axis motor drive
Use within a documented S120 cabinet where one motor axis is assigned to a 45 A Single Motor Module. Verify motor and drive data before enabling the axis.

Shared DC-link assembly
Coordinate the module with the S120 line module and common DC-link busbars. Check 24 V electronics supply and permitted busbar loading in the whole lineup.

Motor-brake integration
Use the X11 brake circuit only after matching the 24 V, 2 A interface and the brake coil, suppression and machine safety sequence.

Service replacement
Keep full order code, axis project, safety settings and motor wiring together. Commission the replacement with controlled low-risk motion and fault-log review.

LIFECYCLE STATUS

Model status: Siemens identifies 6SL3120-1TE24-5AA3 as a spare-part article. Confirm its current order and support phase for the complete marked unit before selecting a successor.

Service planning: Retain the axis project, safety configuration, cooling arrangement and motor data for replacement approval.

Supply status: Apter Power availability and dispatch are confirmed in the quotation separately from the Siemens lifecycle phase.

PRODUCT PRECAUTIONS

Prepare 6SL3120-1TE24-5AA3 as a high-energy S120 motor module. Coordinate electrical isolation, cabinet cooling and axis-project verification before commissioning.

Isolate and discharge the DC link
Follow Siemens and site lockout procedures; verify discharge at the specified points before touching power terminals.

Check busbar and supply fit
Confirm DC-link voltage, busbar ratings and 24 V electronics supply for the existing S120 cabinet.

Preserve cabinet cooling
Inspect fan operation, flow paths and ambient conditions before applying load; do not obstruct the internally cooled module.

Match motor and brake wiring
Verify U2/V2/W2, PE and X11 brake connections against the approved drawings and motor data.

Review cable and EMC design
Check shield termination, grounding and cable length; published maxima depend on the selected motor-cable system.

Commission under controlled motion
Restore the approved parameter and safety project, then test axis direction, feedback, braking and fault behavior before production release.

DOWNLOADS

An applicable original manufacturer technical reference or an Apter Power technical reference is listed in Downloads, followed by the Apter Power engineering technical data PDF. The View PDF control opens this complete product information dossier.

AVAILABLE UNIT DETAILS

Offered unit: Siemens 6SL3120-1TE24-5AA3; New, original product; country of origin Germany.

Identification: Match the complete 45 A booksize Single Motor Module marking and inspect the available-unit label before quotation approval.

Included items: Confirm any DRIVE-CLiQ cable, connector kits and motor-brake wiring items in the quotation; they are not implied by the module name.

Request available-unit photos and details

ALTERNATIVE NAMES

Siemens 6SL3120-1TE24-5AA3 SINAMICS S120 Single Motor Module
SINAMICS S120 6SL3120-1TE24-5AA3 booksize motor module

TECHNICAL NOTES

Drive integration: Confirm the 45 A Single Motor Module arrangement, DC-link supply, motor connection and cooling against the approved S120 cabinet design.

Acceptance: Preserve the axis project, safety configuration and motor data before replacement; verify PE, shield and fan operation before controlled start.

Technical reference: Siemens NC 82 SINAMICS S120 catalogue (2017), booksize Single Motor Modules; Siemens exact-order data sheet.

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ENGINEERING FAQ AND ORDERING CHECKS

ENGINEERING QUESTIONS

Q01 How should 6SL3120-1TE24-5AA3 be assessed before replacing a Motor Module in an S120 lineup?

Compare the complete order number, module topology, DC-link arrangement, control wiring and installed firmware/safety configuration. Confirm the replacement is approved for the existing Control Unit and machine project before energizing.

Q02 What can cause 6SL3120-1TE24-5AA3 to trip during acceleration even when the continuous current rating appears sufficient?

Compare the drive trace with the base-load, S6 and peak-current limits under the actual duty cycle. Check motor load, current limits, ramp settings and cooling before attributing a trip to the module.

Q03 How should cabinet cooling be checked for 6SL3120-1TE24-5AA3 at rated load?

Use the manufacturer maximum power-loss and air-flow values to review the cabinet thermal design. Inspect fan operation, unobstructed inlet and outlet paths, and ambient temperature with the drive operating at representative load.

Q04 Why should motor cable length be reviewed when integrating 6SL3120-1TE24-5AA3?

The published 100 m shielded and 150 m unshielded maxima are conditional. Compare actual cable type, length, motor insulation and EMC installation; determine whether reactors or filters are required by the applicable Siemens system guide.

Q05 How should a technician verify the DC-link supply before commissioning 6SL3120-1TE24-5AA3?

Confirm the system is isolated for wiring work, then follow the S120 startup procedure to check the DC-link range and 24 V electronics supply at the specified test points. Do not treat a nominal 600 V label as permission to bypass discharge checks.

Q06 When is a 24 V motor-brake circuit compatible with 6SL3120-1TE24-5AA3?

Check the X11 brake connection against the documented 24 V DC, 2 A interface and the motor brake coil, suppression and timing requirements. Verify the machine safety sequence before releasing the axis.

Q07 How can grounding faults affect 6SL3120-1TE24-5AA3 after a replacement?

Inspect the M6 protective-earth connection and shield termination. Compare the new wiring with the approved cabinet drawing and test the drive under representative motor current for EMC or earth-fault symptoms.

Q08 What acceptance evidence should be retained after 6SL3120-1TE24-5AA3 is exchanged?

Record the original and replacement complete markings, wiring and PE checks, DC-link and 24 V readings, cooling condition, safety configuration and a controlled axis test with fault history.

WHAT HAPPENS AFTER YOU ENQUIRE / ORDERING VERIFICATION

Review your reference

Share the complete 6SL3120-1TE24-5AA3 nameplate and installed SINAMICS configuration for an identity check.

Match the complete marking

Include 6SL3120-1TE24-5AA3 and every visible hardware revision or assembly label in the enquiry; keep the exact order reference on the quotation.

Confirm the offer

We confirm the offered single motor module marking, included items and quantity in the written quotation.

Check the offered item before ordering

Request label and connector photos. Have maintenance compare the offered reference with the installed motor module and Siemens line-up drawings before ordering.

Arrange dispatch

After quotation approval, we confirm protective packing, dispatch timing and shipment details for the agreed module quantity.

Technical enquiry

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