

Siemens 6SL3130-6TE21-6AA4

Smart Line Module

Siemens 6SL3130-6TE21-6AA4 is a SINAMICS S120 Smart Line Module in booksize construction with internal air cooling. The module provides DC-link infeed and regenerative feedback for a matched drive system, with a 16 kW rated power level.

THREE-PHASE LINE

Power infeed and regenerative return

SMART LINE MODULE

Rectified-line DC-link relationship

DRIVE DC LINK

Matched SINAMICS S120 assembly

01 / DRIVE ROLE

Supplies the common drive DC link

02 / DRIVE ROLE

Returns regenerative energy through the line interface

03 / DRIVE ROLE

Separates continuous, S6-duty and maximum load levels

04 / DRIVE ROLE

Supports a filtered installation when EMC conditions require it

Important Notice: Do not describe this Smart Line Module as an Active Line Module. Check the installed line voltage, duty cycle, total DC-link capacitance and line-filter arrangement before replacement.

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Smart Line Module

Drive system	SINAMICS S120
Module type	Smart Line Module
Construction	Booksize
Cooling method	Internal air cooling
Input phases	3 AC
Nominal input	380-480 V AC, 50/60 Hz
Input operating voltage	342-528 V AC
Input operating frequency	47-63 Hz
380 V line / calculated DC	513 V
400 V line / calculated DC	540 V
480 V line / calculated DC	648 V

Conditional short-circuit strength	65 kA with specified Class J fuse or UL489 / CSA 22.2 No. 5-02 circuit breaker
Minimum fundamental power factor	0.96
Total power factor	0.65-0.90
Overvoltage category	Class III
DC-link voltage relationship	1.35 x line voltage
Electronics supply	24 V DC, -15% / +20%
Maximum electronics current	0.95 A at 24 V DC

RECTIFIED-LINE RELATIONSHIP

The examples apply the stated 1.35-times-line relationship. They are not independent regulated output setpoints; line conditions and the installed system remain relevant.

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Rated infeed power	16 kW	Input current at 380 V	29 A, 3 AC
S6-duty infeed power	21 kW	Input current at 400 V	27.5 A, 3 AC
Maximum infeed power	35 kW	Input current at 480 V	24.5 A, 3 AC
Rated regenerative power	16 kW	S6-duty input current at 400 V	35 A
S6-duty regenerative power	21 kW	Maximum input current at 400 V	57.5 A
Maximum regenerative power	35 kW	Electronics-busbar ampacity	20 A at 24 V DC
DC-link current at 540 V	30 A	DC-link busbar ampacity	100 A
DC-link current at 600 V	27 A	Module DC-link capacitance	710 microfarads
S6-duty DC-link current	35 A	Maximum drive-system DC-link capacitance	20000 microfarads
Maximum DC-link current	59 A		

DUTY, CURRENT AND CAPACITANCE

Select the rated or engineered duty condition first. Keep input current, DC-link current, busbar current and total DC-link capacitance as separate design constraints.

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Line-side connection	Screw-type terminal X1
Line conductor cross-section	2.5-10 mm ² , AWG 14-8
Protective-earth connection	M5 screw
Shield interface	Shield connection plate integrated into connector
Maximum shielded line length	630 m
Maximum unshielded line length	850 m
Enclosure protection	IP20 / UL open type
Operating ambient temperature	0-40 C

Cooling-air flow	0.016 m ³ /s
Installation altitude	1000 m
Power loss at rated power	0.190 kW including electronics-supply losses
Sound pressure level	60 dB
EMC with line filter	Category C2, EN 61800-3, shielded total cable length ≤350 m
Standard radio-interference suppression	None
Standards conformity	CE, cULus

Common DC-link infeed

Provides the power interface between a three-phase line and the matched SINAMICS S120 drive DC link.

Regenerative drive operation

Returns energy through the line interface while retaining the separate rated, S6-duty and maximum regenerative limits.

S6-duty drive cycles

Supports an engineered cyclic load profile without treating the S6 or maximum power level as a continuous rating.

Filtered EMC installation

Uses a line-filter arrangement for Category C2 operation within the stated shielded total cable-length condition.

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Smart Line Module

Does this Smart Line Module hold a regulated, fixed DC-link voltage?

Its DC-link voltage follows the mean rectified supply voltage, specified as 1.35 times line voltage. A fixed-voltage Active Line Module description is not appropriate for this build.

Can the 35 kW maximum be used as the continuous infeed rating?

No. Rated infeed is 16 kW, S6-duty infeed is 21 kW and maximum infeed is 35 kW. The same three levels are listed separately for regenerative feedback.

Why are both 30 A and 27 A listed for the DC link?

They refer to different DC-link voltages: 30 A at 540 V DC and 27 A at 600 V DC. They must not be confused with the separate three-phase input-current values.

Does the 100 A DC-link busbar rating make this a 100 A infeed?

No. That value is busbar ampacity. The module's own rated DC-link current is 27 A at 600 V, with separate S6-duty and maximum current limits.

Rated power, connection-path limits and EMC conditions remain distinct acceptance criteria. A related SINAMICS catalog item is not proof of compatibility or substitution.

Is a 630 m shielded installation automatically Category C2?

No. The general shielded line-length maximum and the EMC condition are different. Category C2 requires a line filter and a shielded total cable length no greater than 350 m.

What condition is attached to the 65 kA short-circuit figure?

It applies with the recommended Class J fuse or a circuit breaker conforming to UL489 / CSA 22.2 No. 5-02. It is not an unconditional short-circuit claim for an arbitrary protective device.

How should the electronics supply be sized independently of the power circuit?

The electronics require 24 V DC with -15% / +20% tolerance and up to 0.95 A. The 20 A electronics-busbar ampacity describes the through-current path, not this module's own consumption.

What cooling values should be retained when replacing the module?

The build uses internal air cooling, with 0.016 m³/s cooling-air flow and a 0-40 °C operating ambient range. Rated-power losses are 0.190 kW including the electronics-supply contribution.

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Smart Line Module

01 / INSTALLATION DECISION

Match the three-phase line to the voltage and frequency operating ranges.

02 / INSTALLATION DECISION

Verify the 24 V electronics supply separately from the high-power DC link.

03 / INSTALLATION DECISION

Retain the specified protective device for the conditional short-circuit rating.

04 / INSTALLATION DECISION

Connect protective earth through the specified M5 connection.

05 / INSTALLATION DECISION

Use the X1 screw terminal with the stated conductor cross-section.

06 / INSTALLATION DECISION

Keep total drive-system DC-link capacitance within its stated maximum.

07 / INSTALLATION DECISION

Maintain the internal-air-cooling path and the specified ambient conditions.

08 / INSTALLATION DECISION

Apply the line filter and shielded-cable limit when Category C2 is required.

Use the module within the matched SINAMICS S120 drive assembly. Coordinate its line-side protection, electronic supply, shared DC link and cooling path; the busbar through-current ratings do not increase the module's own output capability.

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Smart Line Module

MANUFACTURER SOURCE

Data sheet for Smart Line Modules Booksize

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DOCUMENT PURPOSE

Technical Reference groups electrical data and installation decisions. Manufacturer Data Sheet is the unchanged Siemens model sheet. Complete Product Information includes the public engineering dossier.

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Siemens
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RELATED SINAMICS CATALOG

Catalog navigation only; no replacement or pairing equivalence is implied.

[View Siemens 6SL3120-2TE21-8AD0 page](#)

[View Siemens 6SL3200-0SP01-0AA0 page](#)

[View Siemens 6SL3362-0AG00-0AA1 page](#)

[View Siemens 6SL3100-0BE23-6AB0 page](#)

Identity	Smart Line Module, not an Active Line Module.
Load regime	Rated, S6-duty and maximum are separate.
EMC release	C2 requires line filter and its cable condition.
Related catalog	Navigation does not establish interchangeability.