

SINAMICS S120 drive system

DC link components

Braking Modules in booksize format

Overview



A Braking Module and the matching external braking resistor are required to bring drives to a controlled standstill in the event of a power failure (e.g. emergency retraction or EMERGENCY STOP category 1) or limit the DC link voltage for brief periods of generator operation, e.g. when the regenerative feedback capability of the Line Module is deactivated. The Braking Module houses the power electronics and the associated control circuit. During operation, the DC link energy is converted to heat loss in an external braking resistor. Braking Modules function autonomously. A number of Braking Modules can be operated in parallel. In this case, each Braking Module must have its own braking resistor.

Braking Modules in booksize format can also be used for rapid discharge of the DC link.

Design

The Braking Module in booksize format features the following interfaces as standard:

- 2 DC link connections via integrated DC link busbars
- 2 electronics power supply connections via integrated 24 V DC bars
- Terminals for connecting the braking resistor
- 2 digital inputs (disable Braking Module/acknowledge faults and rapid discharge of DC link)
- 2 digital outputs (Braking Module disabled and prewarning – I_{xt} monitoring)
- 2 PE (protective earth) connections

The status of the Braking Module is indicated via two 2-color LEDs.

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Technical specifications

Order No.	6SL3100-1AE31-0AB0
Product name	Braking Module in booksize format
DC link voltage	510 ... 720 V DC
Rated power P_{DB}	1.5 kW
Peak power P_{max}	100 kW
Permissible length of cable to braking resistor, max	10 m (32.8 ft)
DC link capacitance	110 μ F
Current requirement at 24 V DC, max.	0.5 A
Digital inputs	
• Voltage	-3 ... +30 V
• Low level (an open digital input is interpreted as low)	-3 ... +5 V
• High level	15 ... 30 V
• Current consumption at 24 V DC, typ.	10 mA
• Conductor cross-section, max.	1.5 mm ²
Digital outputs (continued-short-circuit-proof)	
• Voltage	24 V DC
• Load current per digital output, max.	100 mA
• Conductor cross-section, max.	1.5 mm ²
Current capacity	
• 24 V DC busbars	20 A
• DC link busbars	100 A
PE connection	On housing with M5 screw
Dimensions	
• Width	50 mm (1.97 in)
• Height	380 mm (15.0 in)
• Depth, with spacer (included in scope of supply)	270 mm (10.6 in)
Weight, approx.	4.1 kg (9.04 lb)
Approvals	cURus (File No.: E192450)

Selection and Ordering Data

Designation	Order No.
DC link voltage 510 ... 720 V DC	
Braking Module in booksize format 1.5 kW/100 kW	6SL3100-1AE31-0AB0

Accessories

Designation	Order No.
Warning signs in foreign languages	6SL3166-3AB00-0AA0
<p>This set of foreign language warning signs can be placed on top of the standard English or German signs.</p> <p>A set of signs is supplied with the units.</p> <p>One sign in each of the following languages is provided in each set:</p> <p>Chinese, Czech, Danish, Dutch, Finnish, French, Greek, Italian, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Swedish and Turkish.</p>	