

SINAMICS S120 drive system

Chassis format

DC link components for chassis format > Braking resistors

Overview



Excess energy in the DC link is dissipated via the braking resistor.

The braking resistor is connected to a Braking Module.

By positioning the braking resistor outside the cabinet or switch-gear room, it is possible to extract the heat losses away from the Line Modules / Motor Modules. This reduces the level of air conditioning required.

The maximum permissible cable length between the Braking Module and braking resistor is 100 m (328 ft).

Two braking resistors with different rated and peak power values are available for the devices.

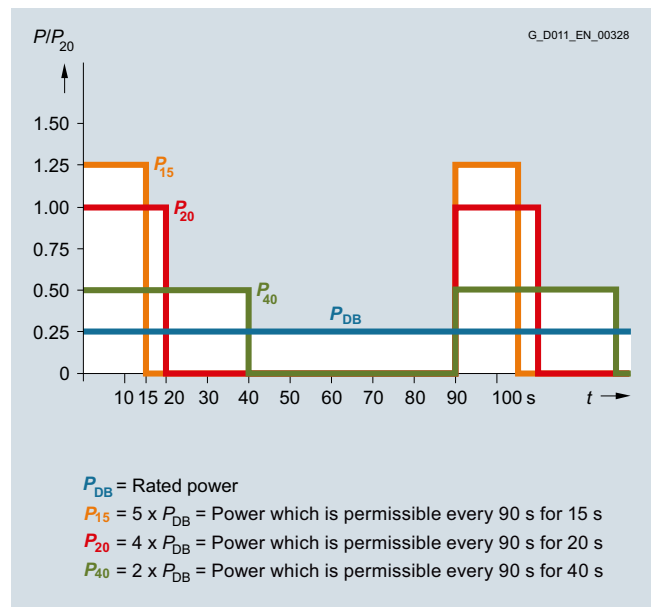
The braking resistor is monitored on the basis of the duty cycle. A temperature switch (NC contact) is also fitted. This responds when the maximum permissible temperature is exceeded and can be evaluated by a controller.

Information about possible duty cycles of the braking resistors and other notes are included in the SINAMICS Low Voltage Engineering Manual.

Selection and ordering data

Rated power P_{DB} kW	Suitable for Braking Module 6SL3300-...	Braking resistor Article No.
Line voltage 380 ... 480 V 3 AC DC link voltage 510 ... 720 V DC		
25	1AE31-3AA0	6SL3000-1BE31-3AA0
50	1AE32-5 . A0	6SL3000-1BE32-5AA0
Line voltage 500 ... 600 V 3 AC DC link voltage 675 ... 900 V DC		
25	1AF31-3AA0	6SL3000-1BF31-3AA0
50	1AF32-5 . A0	6SL3000-1BF32-5AA0
Line voltage 660 ... 690 V 3 AC DC link voltage 890 ... 1035 V DC		
25	1AH31-3AA0	6SL3000-1BH31-3AA0
50	1AH32-5 . A0	6SL3000-1BH32-5AA0

Characteristic curves



Load diagram for Braking Modules and braking resistors

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Technical specifications

Line voltage 380 ... 480 V 3 AC DC link voltage 510 ... 720 V DC		Braking resistor	
		6SL3000-1BE31-3AA0	6SL3000-1BE32-5AA0
Resistance	Ω	4.4 (±7.5 %)	2.2 (±7.5 %)
Rated power P_{DB} (continuous braking power)	kW	25	50
Power P_{15}	kW	125	250
Power P_{20}	kW	100	200
Power P_{40}	kW	50	100
Current, max.	A	189	378
Power connection		M10 stud	M10 stud
• Conductor cross section, max. (IEC)	mm ²	50	70
Degree of protection		IP20	IP20
Dimensions			
• Width	mm (in)	740 (29.1)	810 (31.9)
• Height	mm (in)	605 (23.8)	1325 (52.2)
• Depth	mm (in)	486 (19.1)	486 (19.1)
Weight, approx.	kg (lb)	50 (110)	120 (265)
Suitable for Braking Module	Type	6SL3300-1AE31-3AA0	6SL3300-1AE32-5 . A0

Line voltage 500 ... 600 V 3 AC DC link voltage 675 ... 900 V DC		Braking resistor	
		6SL3000-1BF31-3AA0	6SL3000-1BF32-5AA0
Resistance	Ω	6.8 (±7.5 %)	3.4 (±7.5 %)
Rated power P_{DB} (continuous braking power)	kW	25	50
Power P_{15}	kW	125	250
Power P_{20}	kW	100	200
Power P_{40}	kW	50	100
Current, max.	A	189	378
Power connection		M10 stud	M10 stud
• Conductor cross section, max. (IEC)	mm ²	50	70
Degree of protection		IP20	IP20
Dimensions			
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Weight, approx.	kg (lb)	50 (110)	120 (265)
Suitable for Braking Module	Type	6SL3300-1AF31-3AA0	6SL3300-1AF32-5 . A0

Line voltage 660 ... 690 V 3 AC DC link voltage 890 ... 1035 V DC		Braking resistor	
		6SL3000-1BH31-3AA0	6SL3000-1BH32-5AA0
Resistance	Ω	9.8 (±7.5 %)	4.9 (±7.5 %)
Rated power P_{DB} (continuous braking power)	kW	25	50
Power P_{15}	kW	125	250
Power P_{20}	kW	100	200
Power P_{40}	kW	50	100
Current, max.	A	125	255
Power connection		M10 stud	M10 stud
• Conductor cross section, max. (IEC)	mm ²	50	70
Degree of protection		IP20	IP20
Dimensions			
• Width	mm (in)	740 (29.1)	810 (31.9)
• Height	mm (in)	605 (23.8)	1325 (52.2)
• Depth	mm (in)	486 (19.1)	486 (19.1)
Weight, approx.	kg (lb)	50 (110)	120 (265)
Suitable for Braking Module	Type	6SL3300-1AH31-3AA0	6SL3300-1AH32-5 . A0