

SJ300 Accessories — Braking Resistors

SJ300 Dynamic Braking Selection Chart, 1/2 to 15 hp (0.4 to 11 kW)								
Voltage Class	SJ300 Model Number	Motor Hp	Without Optional External Resistor		With Optional External Resistor		Minimum Resistance	
			Braking Unit	Braking Torque @ 60 Hz (Without External Resistor)	External Resistance (ohms)	Braking Torque @ 60 Hz	Minimum Resistance	Maximum Braking Duty Cycle
200	004LFU	1/2	Built in	50%	50Ω	200%	50Ω	10%
	007LFU	1	Built in	50%	50Ω	200%	50Ω	10%
	015LFU	2	Built in	50%	35Ω	200%	35Ω	10%
	022LFU	3	Built in	20%	35Ω	160%	35Ω	10%
	037LFU	5	Built in	20%	35Ω	100%	35Ω	10%
	055LFU	7.5	Built in	20%	17Ω	80%	17Ω	10%
	075LFU	10	Built in	20%	17Ω	80%	17Ω	10%
	110LFU	15	Built in	10%	17Ω	70%	17Ω	10%
400	007HFU	1	Built in	50%	100Ω	200%	100Ω	10%
	015HFU	2	Built in	50%	100Ω	200%	100Ω	10%
	022HFU	3	Built in	20%	100Ω	200%	100Ω	10%
	040HFU	5	Built in	20%	100Ω	140%	70Ω	10%
	055HFU	7.5	Built in	20%	70Ω	100%	70Ω	10%
	075HFU	10	Built in	20%	70Ω	100%	50Ω	10%
	110HFU	15	Built in	10%	70Ω	70%	50Ω	10%

SJ300 drives larger than 15 hp require separate braking units for dynamic braking. Not available from AutomationDirect; visit www.hitachi.us/inverters.

PLC Overview

DL05/06 PLC

DL105 PLC

DL205 PLC

DL305 PLC

DL405 PLC

Field I/O

Software

C-more HMIs

Other HMI

AC Drives

Motors

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

TB's & Wiring

Power

Circuit Protection

Enclosures

Appendix

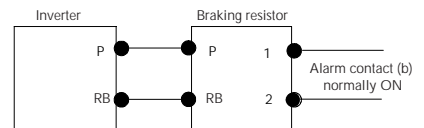
Part Index

SJ300 Accessories — Braking Resistors

200V Class SJ300 Dynamic Braking Resistor Selection Chart													
SJ300 Model Number	JRB Series				SRB/NSRB Series				HRB Series				Available Braking Torque
	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	
004LFU	JRB120-3	50	120	1.5%	SRB/NSRB 300-1	50	300	7.5%	N/A				200%
007LFU	JRB120-3	50	120	1.5%	SRB/NSRB 300-1	50	300	7.5%					
015LFU	JRB120-4	35	120	1.0%	SRB/NSRB 400-1	35	400	7.5%					
022LFU	JRB120-4	35	120	1.0%	SRB/NSRB 400-1	35	400	7.5%					
037LFU	JRB120-4	35	120	1.0%	SRB/NSRB 400-1	35	400	7.5%					
055LFU	JRB120-4 x (2) in parallel	17.5	240	1.0%	SRB/NSRB 400-1 x (2) in parallel	17.5	800	7.5%	HRB3	17	1200	10%	80%
075LFU		17.5	240	1.0%		17.5	800	7.5%	HRB3	17	1200	10%	80%
110LFU		17.5	240	1.0%		17.5	800	7.5%	HRB3	17	1200	10%	70%

200V Class Resistor and Braking Unit Combinations					
SJ300 Model Number	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	Available Braking Torque
* Braking characteristics using the following resistors in conjunction with braking unit BRD-E2. Braking units not available from AutomationDirect; visit www.hitachi.us/inverters.					
150LFU	HRB1*	50	400	10%	30%
	HRB2*	35	600	10%	35%
	HRB3*	17	1200	10%	60%
185LFU	HRB1*	50	400	10%	25%
	HRB2*	35	600	10%	30%
	HRB3*	17	1200	10%	50%
220LFU	HRB1*	50	400	10%	25%
	HRB2*	35	600	10%	30%
	HRB3*	17	1200	10%	45%
** Braking characteristics using the following parallel resistor combinations in conjunction with braking unit BRD-E2-30K. Braking units not available from AutomationDirect; visit www.hitachi.us/inverters.					
150LFU	HRB3** x (2)	8.5	2400	20%	110%
	HRB3** x (3)	5.7	3600	20%	150%
	HRB3** x (4)	4.3	4800	20%	200%
185LFU	HRB3** x (2)	8.5	2400	20%	90%
	HRB3** x (3)	5.7	3600	20%	130%
	HRB3** x (4)	4.3	4800	20%	170%
220LFU	HRB3** x (2)	8.5	2400	20%	80%
	HRB3** x (3)	5.7	3600	20%	110%

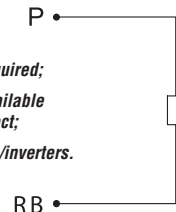
Braking resistor connections for drives 15 hp or less



Braking resistor configuration for drives over 15 hp

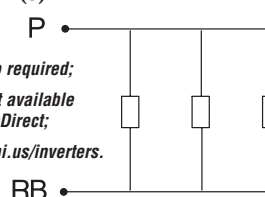
HRB_n

Braking unit also required;
Braking units not available from AutomationDirect;
Visit www.hitachi.us/inverters.



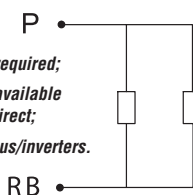
HRB_n x (3)

Braking unit also required;
Braking units not available from AutomationDirect;
Visit www.hitachi.us/inverters.



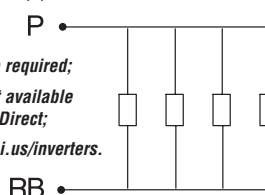
HRB_n x (2)

Braking unit also required;
Braking units not available from AutomationDirect;
Visit www.hitachi.us/inverters.



HRB_n x (4)

Braking unit also required;
Braking units not available from AutomationDirect;
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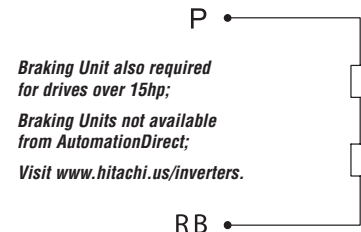


SJ300 Accessories — Braking Resistors

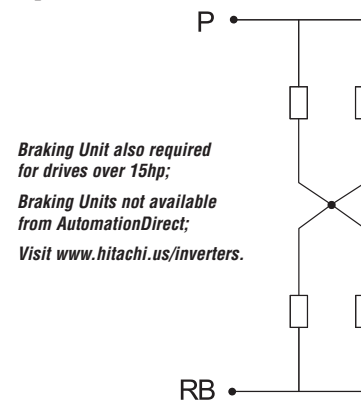
400 V Class SJ300 Dynamic Braking Resistor Selection Chart													
SJ300 Model Number	JRB Series				SRB/NSRB Series				HRB Series				Available Braking Torque
	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	
007HFU	JRB120-2	100	120	1.5%	SRB/NSRB200-2	100	200	7.5%	N/A				200%
015HFU	JRB120-2	100	120	1.5%	SRB/NSRB200-2	100	200	7.5%					200%
022HFU	JRB120-2	100	120	1.5%	SRB/NSRB200-2	100	200	7.5%					200%
040HFU	JRB120-2	100	120	1.5%	SRB/NSRB200-2	100	200	7.5%	HRB1 x (2) in series	100	800	10	140%
055HFU	JRB120-4 x (2) in series	70	240	1.0%	SRB/NSRB400-1 x (2) in series	70	800	7.5%	HRB2 x (2) in series	70	1200	10	120%
075HFU		70	240	1.0%		70	800	7.5%		70	1200	10	100%
110HFU		70	240	1.0%		70	800	7.5%		70	1200	10	70%

400V Class Resistor and Braking Unit Combinations					
SJ300 Model Number	Type and Quantity	Total Ohms	Total Watts	Max. Duty Cycle	Available Braking Torque
* Braking characteristics using the following series resistor combinations in conjunction with Braking Unit BRD-EZ2. Braking units not available from AutomationDirect; visit www.hitachi.us/inverters.					
150HFU	HRB1* x (2) in series	100	800	10%	40%
	HRB2* x (2) in series	70	1200	10%	60%
	HRB3* x (2) in series	34	2400	10%	110%
185HFU	HRB1* x (2) in series	100	800	10%	40%
	HRB2* x (2) in series	70	1200	10%	50%
220HFU	HRB1* x (2) in series	100	800	10%	35%
	HRB2* x (2) in series	70	1200	10%	45%
	HRB3* x (2) in series	34	2400	10%	80%
** Braking characteristics using the following series/parallel resistor combinations in conjunction with Braking Unit BRD-EZ2-30K. Braking units not available from AutomationDirect; visit www.hitachi.us/inverters.					
150HFU	HRB3** x (4) 2 parallel, 2 series	17	4800	10%	190%
	HRB3** x (6) 3 parallel, 2 series	11.3	7200	10%	200%
185HFU	HRB3** x (4) 2 parallel, 2 series	17	4800	10%	170%
	HRB3** x (6) 3 parallel, 2 series	11.3	7200	10%	200%
220HFU	HRB3** x (4) 2 parallel, 2 series	17	4800	10%	150%
	HRB3** x (6) 3 parallel, 2 series	11.3	7200	10%	200%

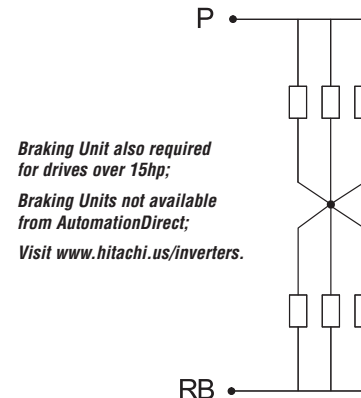
HRB n x (2) in series



HRB n x (4) 2 parallel, 2 series



HRB n x (6) 3 parallel, 2 series



SJ300 Accessories — Braking Resistors

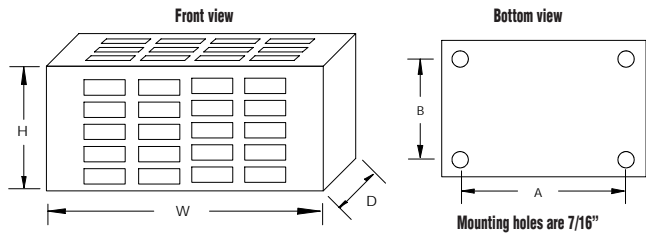
NEMA 1 Resistors

Use this accessory when there is a need for a fast deceleration and/or you have a load with too much inertia. Otherwise, you will get an overvoltage trip. If your application coasts to stop, there is no need to use this accessory.

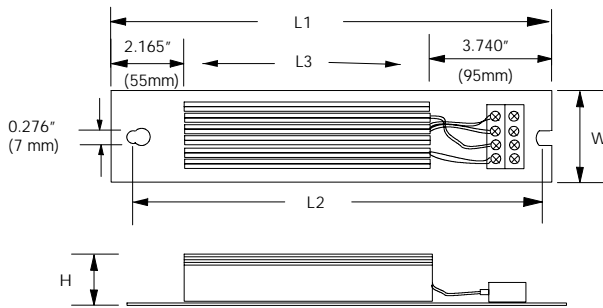
Specifications

- NEMA 1, ANSI-61 gray powder coat enclosures with ventilated covers
- Resistor assemblies wired with high temperature Teflon® wire to a two point terminal block
- Resistor assemblies protected by a normally closed thermal sensing switch
- Resistance values are $\pm 10\%$.
- All terminals, terminal hardware and connection jumpers are stainless steel.
- Enclosed junction box area for terminal block and thermal switch

HRBx and NSRBxxx-x Pricing and Dimensions (in Inches)								
Part Number	Description	W	D	H	A	B	Weight	Price
HRB1	50 Ω , 400W Resistor	14"	7"	5"	12"	5"	9 lbs.	<--->
HRB2	35 Ω , 600W Resistor	14"	7"	5"	12"	5"	9 lbs.	<--->
HRB3	17 Ω , 1200W Resistor	14"	13"	5"	12"	11"	15 lbs.	<--->
NSRB200-1	180 Ω , 200W Resistor	14"	7"	5"	12"	5"	8 lbs.	<--->
NSRB200-2	100 Ω , 200W Resistor	14"	7"	5"	12"	5"	8 lbs.	<--->
NSRB300-1	50 Ω , 300W Resistor	14"	7"	5"	12"	5"	9 lbs.	<--->
NSRB400-1	35 Ω , 400W Resistor	14"	7"	5"	12"	5"	9 lbs.	<--->



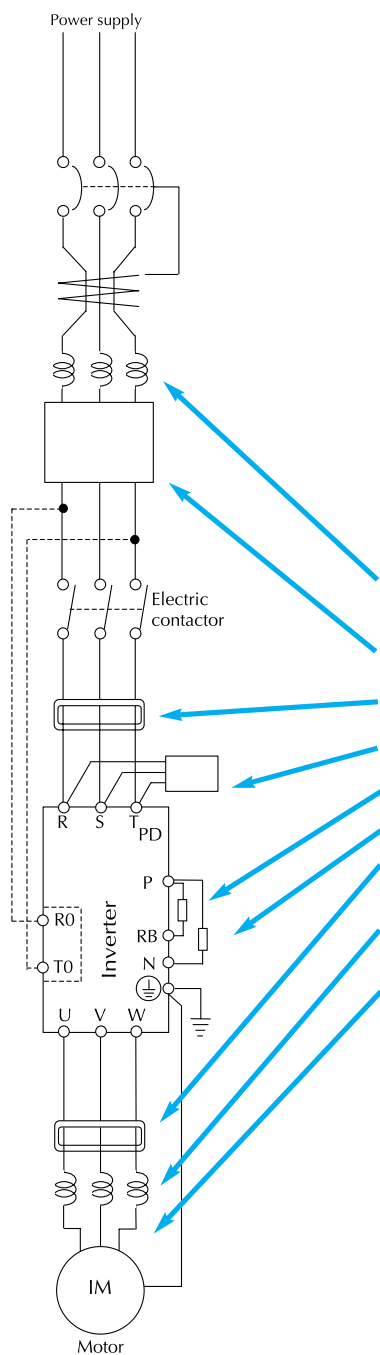
SRB-xxx dimensions



SRBxxx Pricing and Dimensions*					
Model	L1	L2	H	W	Price
SRB200-1	12.205"(310)	11.614"(295)	2.638"(67)	2.520"(64)	<--->
SRB200-2	12.205"(310)	11.614"(295)	2.638"(67)	2.520"(64)	<--->
SRB300-1	18.504"(470)	17.913"(455)	2.638"(67)	2.520"(64)	<--->
SRB400-1	17.716"(450)	17.126"(435)	3.701"(94)	2.992"(76)	<--->

* inches (millimeters)

SJ300 Accessories — Introduction



Customize your application

We offer a complete line of accessories that allows you to customize your SJ300 application. Choose from the accessories in the table below to enhance your SJ300's performance. Detailed specifications on the SJ300 accessories are located on the next few pages.

Warning

If your application requires a non-time controlled stop (Emergency Stop), then you must wire an E-Stop and provide a mechanical stop in your process. Depending on inertia and other factors, fast stopping can be achieved without an E-Stop, but it remains non-time-controlled. The user must determine whether a time-controlled stop is adequate for the process.

Accessories	
Name	Function
AC Reactor (HRL-x)	This is useful when harmonic suppression measures must be taken, when the main power voltage unbalance rate exceeds 3% and the main power capacity exceeds 500kVA, or when a sudden power voltage variation occurs. Protects drive diodes.
EMI Filter (FFL-x)	Reduces electromagnetic interference or noise on the input side of the inverter. For CE compliance.
RF Filter, Input Side (ZCL-x)	Reduces FR noise on the input side of the inverter. -B40 (400V & 200V to 5Hp), -A (200V above 5Hp)
Capacitive Filter (CFI-x)	Reduces radio frequency noise on the input side of the inverter. -L for 200V and -H for 400V (Non CE)
Braking Resistor	Used to increase the control torque of the inverter, for frequently repeated ON-OFF cycles of the inverter, or for decelerating a load with large inertia.
Braking Unit (BRD-x)	
RF Filter, Output Side (ZCL-A, ZCL-B40)	Reduces radio frequency interference or noise on the output side of the inverter. (This is the same part as that on the input side.)
Output AC Reactor (HRL-x)	Used to reduce motor vibration. When the wire length between the inverter and motor is more than 30 feet, this unit protects the motor insulation from harmonics. A current sensor may be used instead of the thermal relay.
Output Wiring	Must be shielded for CE compliance.

