

345 3753

The Anderson Power SB® Connector Concept

Anderson Power Products® SB® 2 pole connector is available in 50, 175, and 350 amps ratings for use to 600 Volts continuous AC or DC operation. Mechanical keys molded into connectors of the same color only will mate. Different color housings may be selected to identify other voltages, thus preventing the mismatching of the power supply to the electrical output. This hermaphroditic connector was invented by Anderson Power Products.

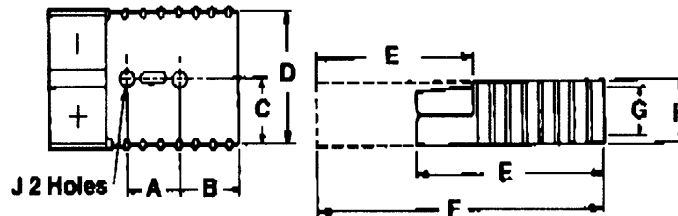
C

The single piece housing and modular construction provide industrial quality and durability with minimum inventory.

Individually replaceable contacts enable easy field service. Reel fed contacts are available for high volume production environments.

Spring loaded silver plated, contoured contacts have a self-wiping cleaning action, which ensures greater conductivity and longer life.

The polycarbonate housing is a rugged material that has been proven in electrical, electronic and industrial applications.



Dimensions

Model	A		B		C	
	in.	mm	in.	mm	in.	mm
SB50	0.75	19.0	0.25	6.4	0.72	18.2
SB175	1.13	28.5	0.44	11.0	1.09	27.8
SB350	1.13	28.5	1.38	35.0	1.38	35.0
Model	D		E		F	
SB50	1.44	36.5	1.88	47.6	3.19	80.9
SB175	2.19	55.6	3.13	79.4	5.25	133.3
SB350	2.75	69.8	4.25	108.0	7.19	182.6
Model	G		H		J dia.	
SB50	0.45	11.5	0.63	15.9	0.14	3.7
SB175	0.75	19.0	1.00	35.4	0.27	6.7
SB350	1.06	27.0	1.31	33.3	0.27	6.7

Voltage Key Color Code

Color	Voltage Recommended:	Color	Voltage Recommended
Yellow	12V	Gray	36V
Orange	18V	Blue	48V
Red	24V	Green	72V



UL Recognized



CSA Certified

A range of wire sizes from smallest to the largest conductor normally recommended for the SB[®] Series of connectors is shown in Table A. The wire sizes are listed in AWG and MCM for each of the models. Reducing bushings which can be used to accommodate smaller wire sizes are also listed in the Table.

The maximum continuous current rating for a wire conductor is limited by the conductor size, the number of conductors contained in a cable, and maximum temperature rating of the cable. Procedures that describe the correct methods to determine conductor size, current capacity (in terms of applied loads versus temperature rise) and methods for crimping and soldering are described in following sections.

C

TABLE A WIRING GUIDE

SB SERIES MODEL	STRANDED COPPER CONDUCTOR (SIZE AWG OR MCM)														300				
	16	14	12	10	8	6	4	2	1	1/0	2/0	30	4/0	MCM	16mm	35mm	50mm	70mm	95mm
SB 50	■	■	■	■	■	■	■	■	■	■									
SB 175			■	■	■	■	■	■	■	■	■	■	■						
SB 350										■	■	■	■	■	■				
SBX 175			■	■	■	■	■	■	■	■	■	■	■		■	■	■		
SBX 350									■	■	■	■	■	■	■	■	■	■	■
SBE 160			■	■	■	■	■	■	■	■	■	■	■		■	■	■		
SBE 320									■	■	■	■	■	■	■	■	■	■	■

■■■■■ REDUCING BUSHING USED TO ACCOMMODATE SMALLER WIRE SIZES
NOTE: AWG CONTACTS MAY BE USED ON APPROPRIATELY SIZED METRIC CONDUCTORS
FOR CROSS-REFERENCE SEE CONVERSION CHART ON PAGE 26.

SB® Connectors

50 amp Series Connectors 2-Pole

Catalog Number	Description	Housing Color	Wire AWG	Cable Well Diameter		Cable Size sq. mm.
				in.	mm.	
6319	Housing with springs & 2 contacts	Gray	#6	.22	5.5	13.3
6319G1			#10/#12	.13/.10	3.2/2.8	5.3/3.3
6331G1		Red	#6	.22	5.5	13.3
6331G2			#10/#12	.13/.10	3.2/2.8	5.3/3.3
6331G3		Black	#6	.22	5.5	13.3
6331G4			#10/#12	.13/.10	3.2/2.8	5.3/3.3

50 amp Housings

Catalog Number	Description	Housing Color
992	Housing with springs	Gray
992G1		Red
992G2		Black

50 amp Housing - 94V0

Catalog Number	Description	Housing Color
SB50BLK	Housings with springs	Black
SB50GRA		Gray
SB50RED		Red

50 amp Contacts

Catalog Number	Description	Wire AWG	Cable Well Diameter		Cable Size sq. mm.
			in.	mm.	
903G1	Contact Set:	#6	.22	5.5	13.3
904G1	2 contacts	#10/#12	.13/.10	3.2/2.8	5.3/3.3
5900	Individual	#6	.22	5.5	13.3
1307	Individual-Low Detent	#6	.22	5.5	13.3
5952	Individual	#8	.16	4.1	8.4
5915	Individual	#10/#12	.13/.10	3.2/2.8	5.3/3.3

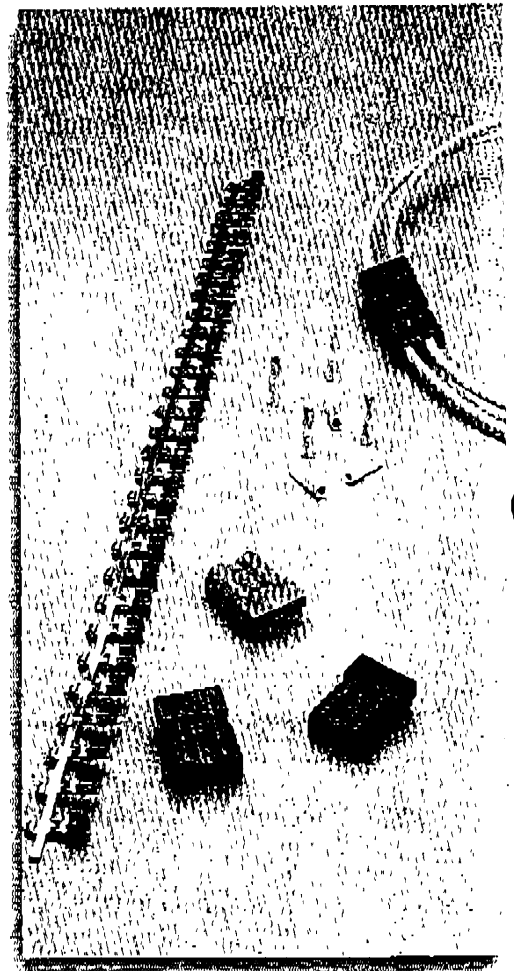
50 amp Reel Contacts - Tin Plated

Catalog Number	Description	Wire AWG	Cable Well Diameter		Cable Size sq. mm.
			in.	mm.	
265G5	Reel Contacts-Tin Plated	#6/#8	.22/.16	5.5/4.1	13.3/8.37
265G6		#10/#12	.13/.10	3.2/2.8	5.3/3.3
265G8	(Low Detent)	#10/#12	.13/.10	3.2/2.8	5.3/3.3
265G7	(Low Detent)	#6/#8	.22/.16	5.5/4.1	13.3/8.37

50 amp Reel Contacts - Silver Plated

Catalog Number	Description	Wire AWG	Cable Well Diameter		Cable Size sq. mm.
			in.	mm.	
265G1	Reel contact	#6/#8	.22/.16	5.5/4.1	13.3/8.4
265G2		#10/#12	.13/.10	3.2/2.8	5.3/3.3
265G3	Low Detent	#6/#8	.22/.16	5.5/4.1	13.3/8.4
265G4	Low Detent	#10/#12	.13/.10	3.2/2.8	5.3/3.3

Patent Pending



* Cable clamps are necessary for solder connections to unsupported leads (required by UL). See Cable Clamps.

Reducing bushings should be used to crimp smaller wire sizes. See Reducing Bushings.

Operating Characteristics

Ampere/Temperature Curves (See Figures 1 through 8)

Ampere/Temperature curves help to evaluate and rate SB[®] connectors in terms of applied current load versus temperature rise.

Each graph shows the curves resulting from loading the smallest and largest cables (AWG size) normally recommended for a particular connector; curves for cables between the smallest and largest can be easily estimated. Thus, with consideration of both ampere and temperature characteristics, connectors can be selected according to load and temperature limits or requirements of particular installations.

C

Typical Characteristics

Connector Model	SB50	SB175	SB350	SBX175	SBX350	SBE160	SBE320	SB175 3-POLE
UL Current Rating (Ampere)*	50	175	350	175	350	160	320	175
UL Voltage Rating (Volts) **	600	600	600	600	600	150	150	600
Contact Barrel Wire Size Accommodation (AWG) * <i>(see table under wiring guide)</i>	6 to 16	1/0	2/0 TO 4/0 300 mcm	1/0	2/0 TO 4/0 300 mcm	35 mm 1/0	2/0 to 4/0 2 AWG/300mcm	1/0
AVG Contact Resistance * (microhms)	200	100	50	100	50	100	50	100
Insulation Withstanding Test Voltage (Volts DC)	2200	2200	2200	2200	2200	1300	1300	2200
Maximum Wire Insulation Diameter (inches)	0.44	0.75	1.10	0.75	1.10	0.75	1.10	0.75
Contact Retention Force (lbs)	50	300	500	300	500	300	500	300
Avg. Connection/Disconnect Force (lbs)	15	25	30	25	30	25	30	35
Operating Temperature Range °C ***	-20° to 105°	-20° to 105°	-20° to 105°	-20° to 105°	-20° to 105°	-20° to 105°	-20° to 105°	-20° to 105°
Flammability Rating of Housing Material	UL 94V2 & UL 94V0							

- * For largest 65°C rated wire or cable size
- ** Both AC & DC Voltage
- *** Contact factory for higher temperature rated connectors

SB UL and CSA Reference

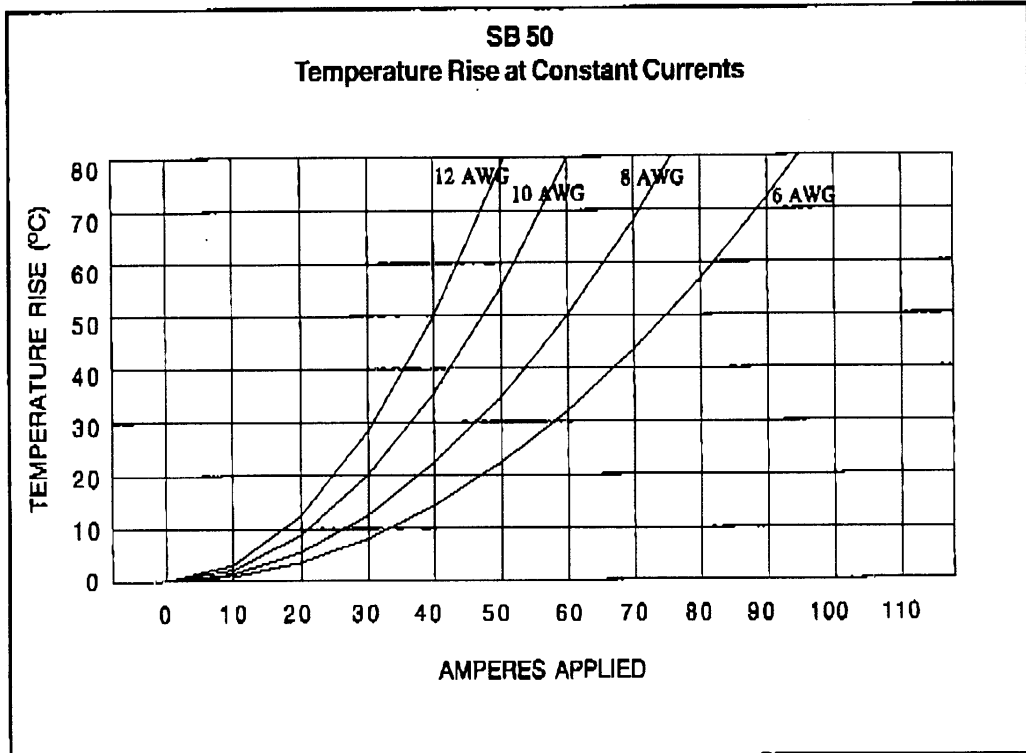
This equipment is an Underwriters Laboratories Inc.[®] recognized component, File E26226; it is also listed by the Canadian Standards Association as certified, Report LR25154.

Conversion Chart of American Wire Gauge to Metric System

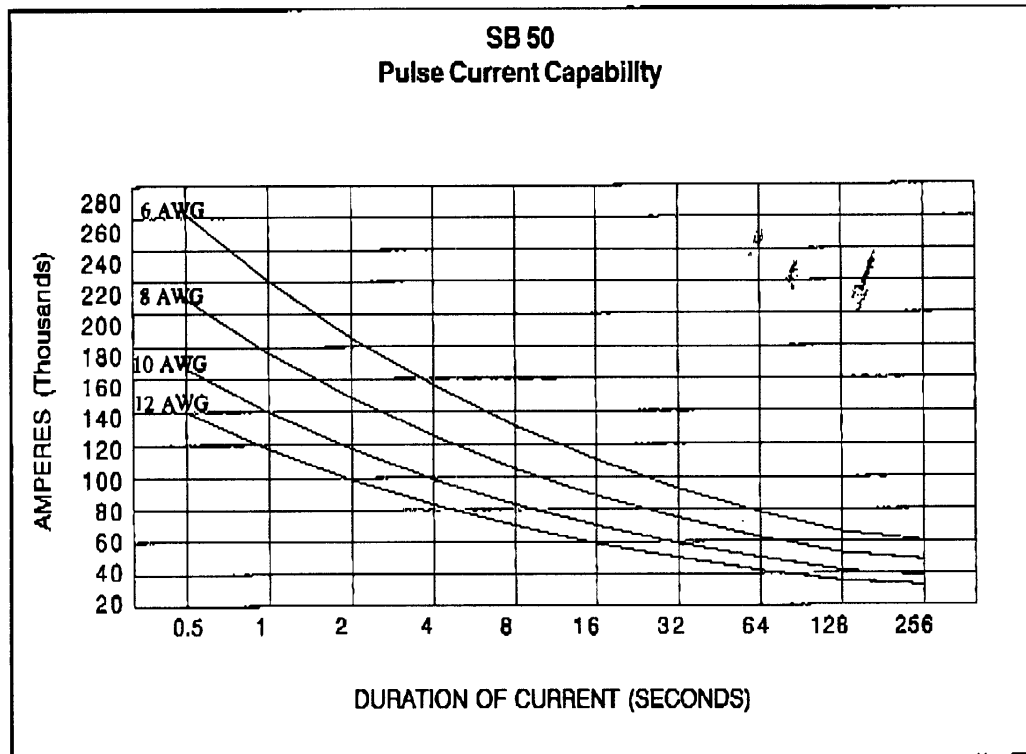
C

Size AWG or MCM	Amperes Single Cond. 75°C Copper (NFPA)	Circular Mils	Area		Approx. Diameter	
			Square Inches	Square mm	Inches ClassM (NEMA)	mm
20	7	1020	.0008	.52	.038	.97
18	10	1620	.0013	.82	.048	1.22
16	15	2580	.0020	1.31	.060	1.52
14	20	4110	.0032	2.08	.078	1.98
12	25	6530	.0051	3.31	.101	2.57
10	40	10380	.0082	5.26	.126	3.20
8	65	16510	.0130	8.37	.162	4.11
6	95	26240	.0206	13.30	.215	5.46
4	125	41740	.0328	21.15	.269	6.83
2	170	66360	.0521	33.62	.337	8.56
1	195	83690	.0657	42.41	.376	9.55
1/0	230	105600	.0829	53.50	.423	10.74
2/0	265	133100	.1045	67.43	.508	12.90
3/0	310	167800	.1318	85.01	.576	14.63
4/0	360	211600	.1662	107.20	.645	16.38
250 MCM	405	250000	.1964	126.70	.713	18.11
300 MCM	445	300000	.2356	152.00	.768	19.51
500 MCM	620	500000	.3927	253.40	.997	25.32
750 MCM	785	750000	.5891	380.00	1.207	30.66
1000 MCM	935	1000000	.7854	506.70	1.404	35.66

Operating Characteristics



(Figure 1)



(Figure 2)

For equivalent millimeter wire sizes, reference the "Conversion Chart of American Wire Gauge to Metric System" in this section. Contact Anderson Power Products or authorized representative for graphs of wire sizes not shown.