

SB® Connectors

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.

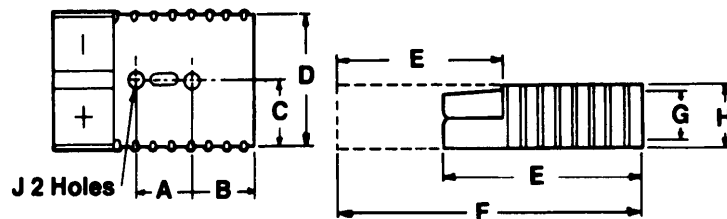
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The single piece housing and modular construction provide industrial quality and durability with minimum inventory.

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



UL Recognized



CSA Certified

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	Gray	#6	.22	5.5	13.3
6319G1	springs & 2 contacts		#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	Gray
992G1	springs	Red
992G2		Black

50 amp Housing - 94VO

Catalog Number	Description	Housing Color
SB50BLK	Housings with	Black
SB50GRA	springs	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

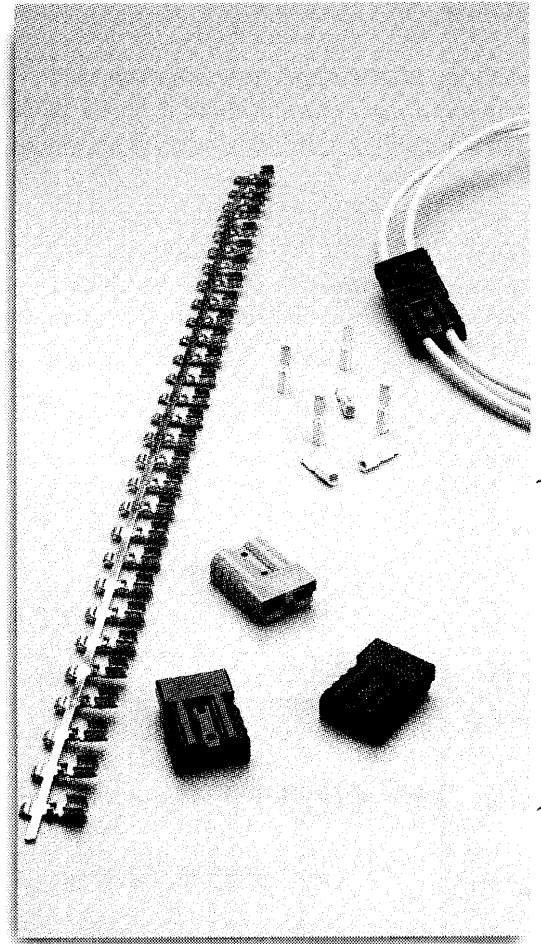
50 amp Reel Contacts - Tin Plated

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	13.3/8.4
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.

175 amp Series Connectors 2-Pole

Catalog Number	Description	Housing Color	Wire AWG	Diameter		Cable Size
				in.	mm	sq. mm
6325G1	Housing with springs & 2 contacts	Gray	1/0	.44	11.1	53.5
6326G1		Blue				
6327G1		Orange				
6328G1		Yellow				
6329G1		Red				
6325G5		Gray	#2	.35	8.9	33.6
6326G5		Blue				
6327G5		Orange				
6328G5		Yellow				
6329G5		Red				
6325G6		Gray	#4	.29	7.4	21.1
6326G6		Blue				
6327G6		Orange				
6328G6		Yellow				
6329G6		Red				

175 amp Housings

Catalog Number	Description	Housing Color
940	Housing with springs	Gray
941		Blue
942		Orange
943		Yellow
949		Red

175 amp Housings - 94V0

Catalog Number	Description	Housing Color
SB175GRA	Housing with springs	Gray
SB175BLU		Blue
SB175ORN		Orange
SB175YEL		Yellow
SB175RED		Red

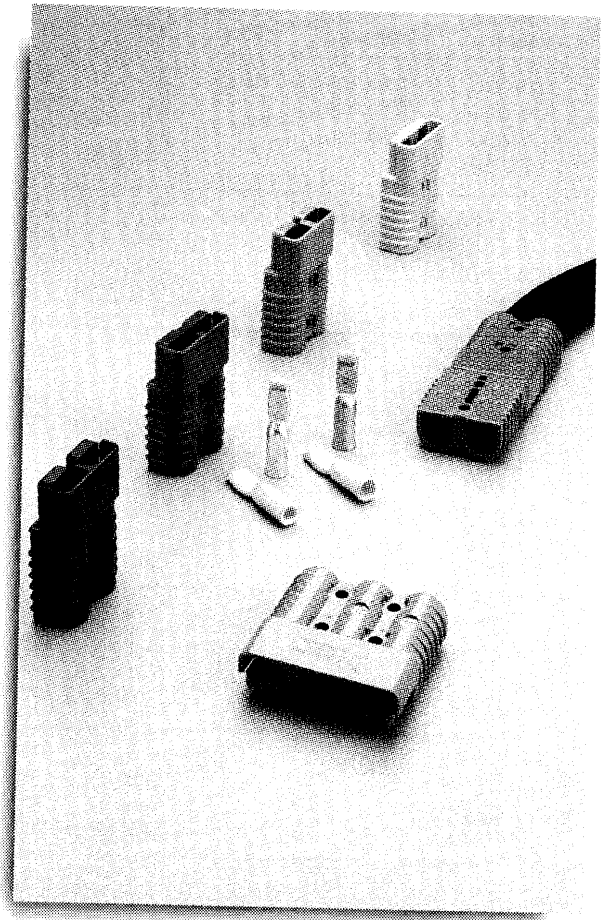
175 amp Contacts

Catalog Number	Description	Wire AWG	Diameter		Cable Size
			in.	mm	sq. mm
944	Contact Set 2 contacts	1/0	.44	11.1	53.5
947		#2	.35	8.9	33.6
948		#4	.29	7.4	21.1
944G1	Individual	#1	.38	9.6	42.4

3 Series Connector

3 Pole-175 Amp-600Volts

Catalog Number	Description	Wire AWG	Diameter		Cable Size
			in.	mm	sq. mm
6316	Housing with springs and 3 contacts	1/0	.44	11.1	53.5
902	Housing with springs				
905	Housing with springs and 3 contacts	1/0	.44	11.1	53.5



* 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.

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350 amp Series Connectors 2-Pole

Catalog Number	Description	Housing Color	Wire AWG	Cable Well Diameter		Cable Size sq. mm
				in.	mm	
6320G1	Housing with springs & 2 contacts	Gray	2/0	.48	12.3	67.4
6320G5			3/0	.58	14.7	85.0
6320G2			4/0	.64	16.3	107.2
6320G4			300MCM	.77	19.4	152.0
6321G1		Blue	2/0	.48	12.3	67.4
6321G5			3/0	.58	14.7	85.0
6321G2			4/0	.64	16.3	107.2
6321G4			300 MCM	.77	19.4	152.0
6322G1		Red	2/0	.48	12.3	67.4
6322G5			3/0	.58	14.7	85.0
6322G2			4/0	.64	16.3	107.2
6322G4			300 MCM	.77	19.4	152.0
6323G1		Yellow	2/0	.48	12.3	67.4
6323G5			3/0	.58	14.7	85.0
6323G2			4/0	.64	16.3	107.2
6323G4			300 MCM	.77	19.4	152.0
6324G1		Green	2/0	.48	12.3	67.4
6324G5			3/0	.58	14.7	85.0
6324G2			4/0	.64	16.3	107.2
6324G4			300 MCM	.77	19.4	152.0
6400G1		Orange	2/0	.48	12.3	67.4
6400G5			3/0	.58	14.7	85.0
6400G2			4/0	.64	16.3	107.2
6400G4			300 MCM	.77	19.4	152.0



350 amp Housings

Catalog Number	Description	Housing Color
906	Housings with springs	Gray
912		Blue
913		Red
914		Yellow
931		Green
932		Orange

350 amp Housings - 94VO

Catalog Number	Description	Housing Color
SB350GRA	Housing with springs	Gray
SB350BLU		Blue
SB350ORN		Orange
SB350YEL		Yellow
SB350RED		Red

350 amp Contacts

Catalog Number	Description	Wire AWG	Cable Well Diameter		Cable Size sq. mm
			in.	mm	
907	Contact Set:	2/0	.48	12.3	67.4
916	2 contacts	3/0	.58	14.7	85.0
908		4/0	.64	16.3	107.2
910		300 MCM	.77	19.4	152.0

* 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.

Handles

Polycarbonate handle relieves unnecessary strain on cables when disconnecting.

Catalog Number	For Use With	Description	Hardware Kit Includes		Color
995G1	SB175	1 handle & hardware 4 lockwashers	4 screws	4 nuts	Gray
995G3	SB175	1 handle & hardware 4 lockwashers	4 screws	4 nuts	Red
995G2	SB350	1 handle & hardware 4 lockwashers	4 screws	4 nuts	Gray
995G4	SB350	1 handle & hardware 4 lockwashers	4 screws	4 nuts	Red
SB50-HDL	SB50	1 handle & hardware	2 screws		Red

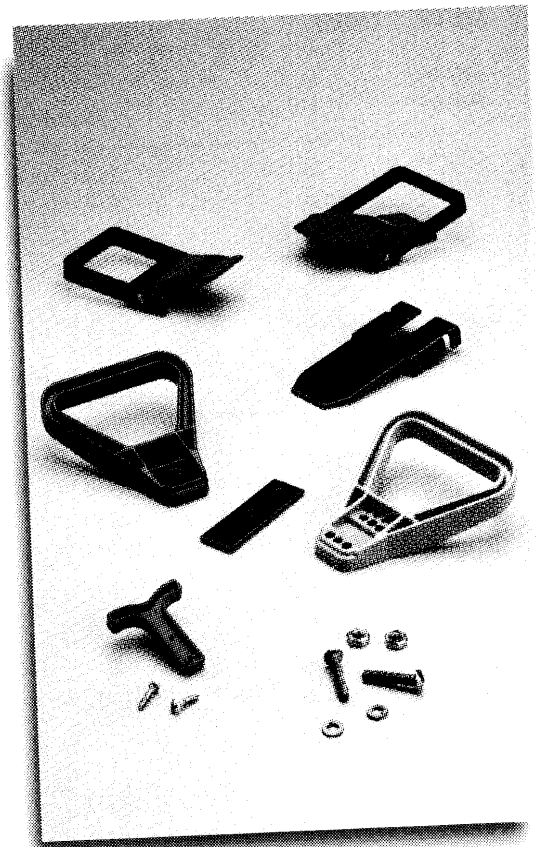
Manual Releases

Insulated non-corrosive steel structure. Provides smooth and efficient power connection/disconnection. Maintains connector alignment.

Catalog Number	For Use With	Description	Hardware Kit Includes	
923	SB175 for battery	Locking half: cable clamps & hardware	3 screws	3 hex nuts 3 lockwashers
924	SB175 for truck or charger	Mounting half: hardware	2 screws	2 nuts 2 lockwashers
919	SB350 for battery	Locking half: cable clamps hardware & Lock Out Spring	3 screws	3 nuts 3 lockwashers
919G1	SB350 for battery	Mounting Half: hardware & Lock Out Spring	2 screws	2 nuts 2 lockwashers
922G1	SB350 for truck or charger	Mounting half: hardware	2 screws	2 nuts 2 lockwashers

Charger Key

Catalog Number	For Use With	Description
111197	SB175	Prevents charger and truck connector halves from engaging
111197G1	SB350	Prevents charger and truck connector halves from engaging



SB[®] Connectors

Accessories

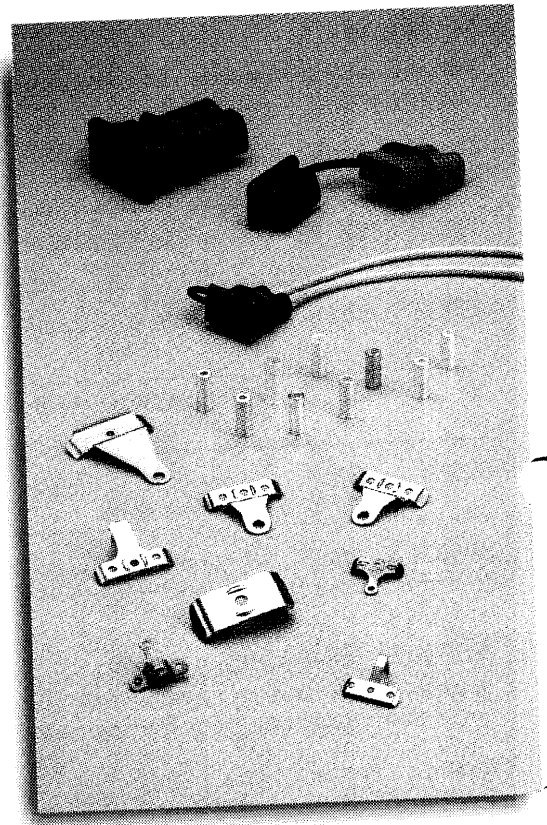
Dust Cover

Catalog Number	For Use With	Description
134G1	SB50	Dust Cover - Red
134G2	SB175	Dust Cover - Red
134G3	SB350	Dust Cover - Red

Cable Clamps

Underwriters Laboratories Inc.[®] requires use of cable clamps when contacts are soldered to unsupported leads.

Catalog Number	Description	For Use With	Hardware Kit Includes
990	For single conductor cables with hardware. self attaching	SB50	1 self-tapping screw 1 lockwasher
990G1	For single conductor cables with hardware for screw mounting	SB50	1 self-tapping screw 1 lockwasher
5905	For 1 twin conductor cable with hardware	SB50	2 self-tapping screws 1 screw 1 nut 1 lockwasher
945	For 2 single conductor cables with hardware	SB175	1 screw 1 hex nut 1 lockwasher
945G3	For 2 single conductor cables with hardware. Used with "A" Frame Handle only.	SB175	1 screw 1 nut 1 lockwasher
946G1	For 1 twin conductor cable with hardware. Used with or without "A" Frame Handle only.	SB175	2 self tapping screws 1 screw 1 nut 3 lockwashers
996G1	For 2 single conductor cables with hardware. Used with "A" Frame Handle only.	SB350	1 screw 1 nut 1 lockwasher
911	For 2 single conductor cables with hardware	SB350	3 screws 3 hex nuts



Reducing Bushings

Assures proper fit when crimping contact to smaller cable sizes.

Catalog Number	For Use With	AWG Wire Size
5912	SB50	6 to 8
5910		6 to 10 & 12
5913		6 to 14 & 16
5687	SB175	1/0 to 1
5690		1/0 to 2
5693		1/0 to 4
5663		1/0 to 6
5648		1/0 to 10
5918	SB350	2/0 to 1/0

Operating Characteristics

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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.

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							

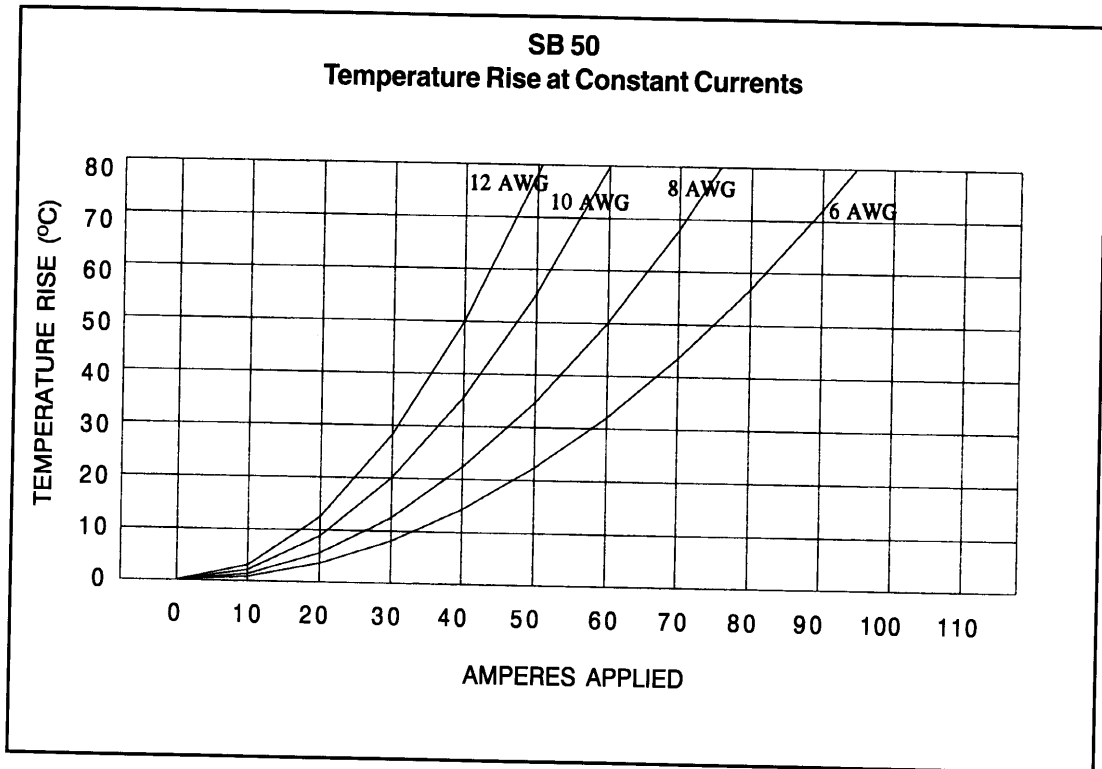
- * For largest 65°C rated wire or cable size
- ** Both AC & DC Voltage
- *** Contact factory for higher temperature rated connectors

SB UL and CSA Reference

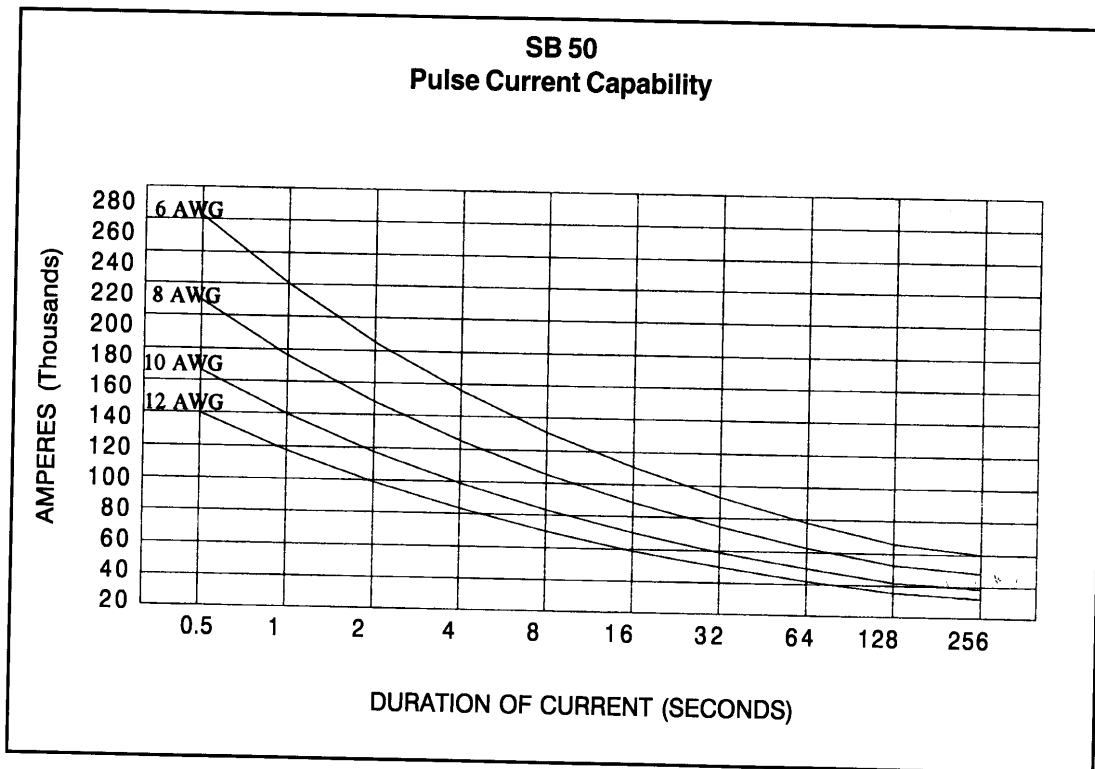
This equipment is an Underwriters Laboratories Inc.® recognized component, File E26226; it is also listed by the Canadian Standards Association as certified, Report LR25154.

Conversion Chart of American Wire Gauge to Metric System

Size AWG or MCM	Amperes Single Cond. 75°C Copper (NFPA)	Circular Mils	Area Square Inches	Square mm	Approx. Diameter	
					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



(Figure 1)

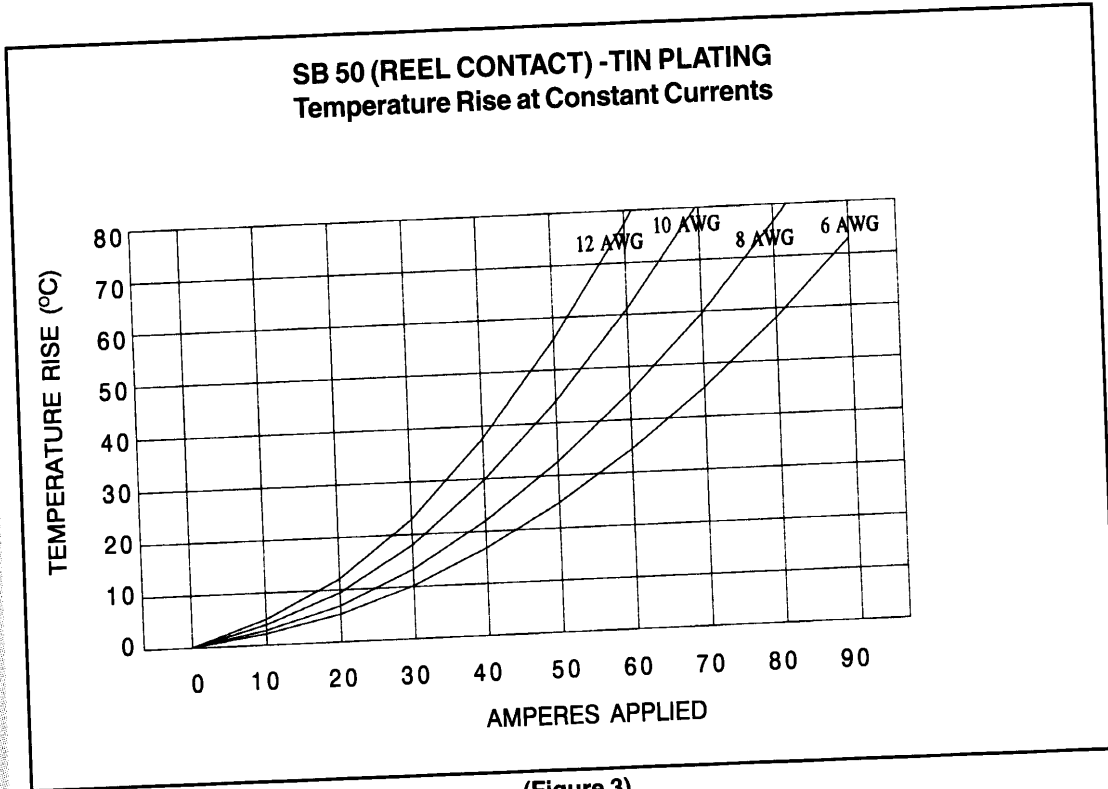


(Figure 2)

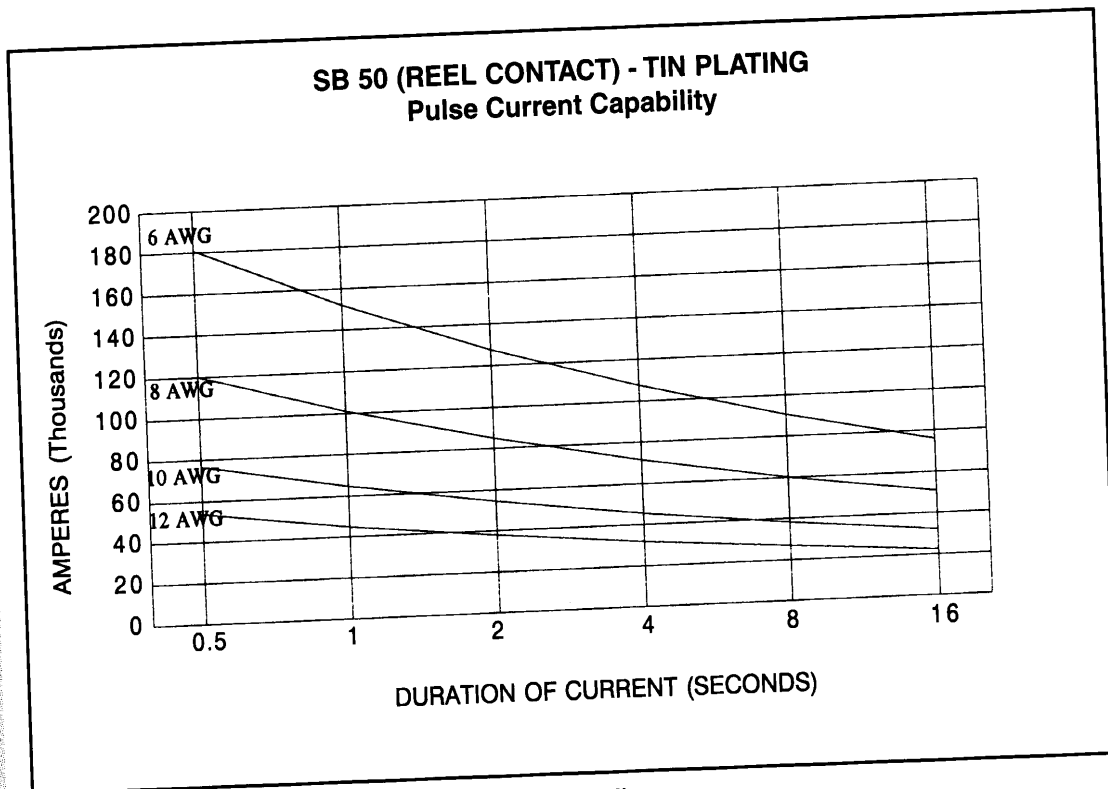
For equivalent millimeter wire sizes, reference the "Conversion Chart of American Wire Gauge to Metric System" in this section. Contact Anderson Power Products or authorized representative for graphs of wire sizes not shown.

SB[®] Connectors

Operating Characteristics



(Figure 3)



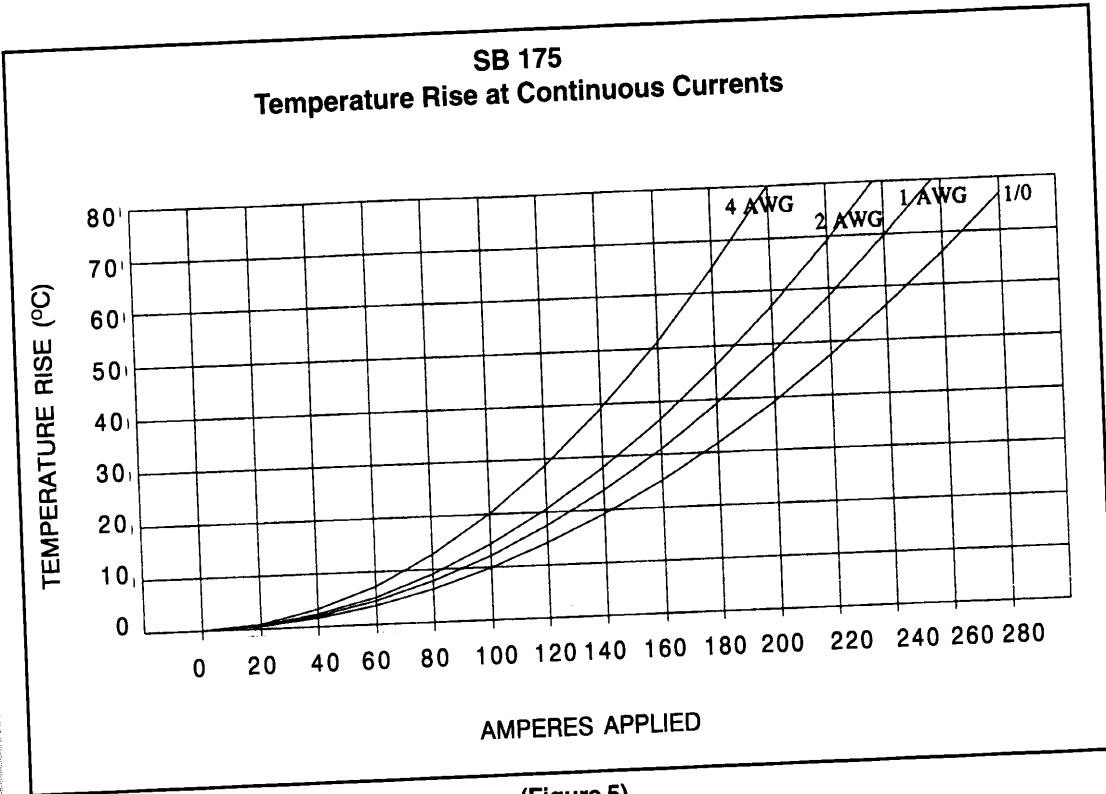
(Figure 4)

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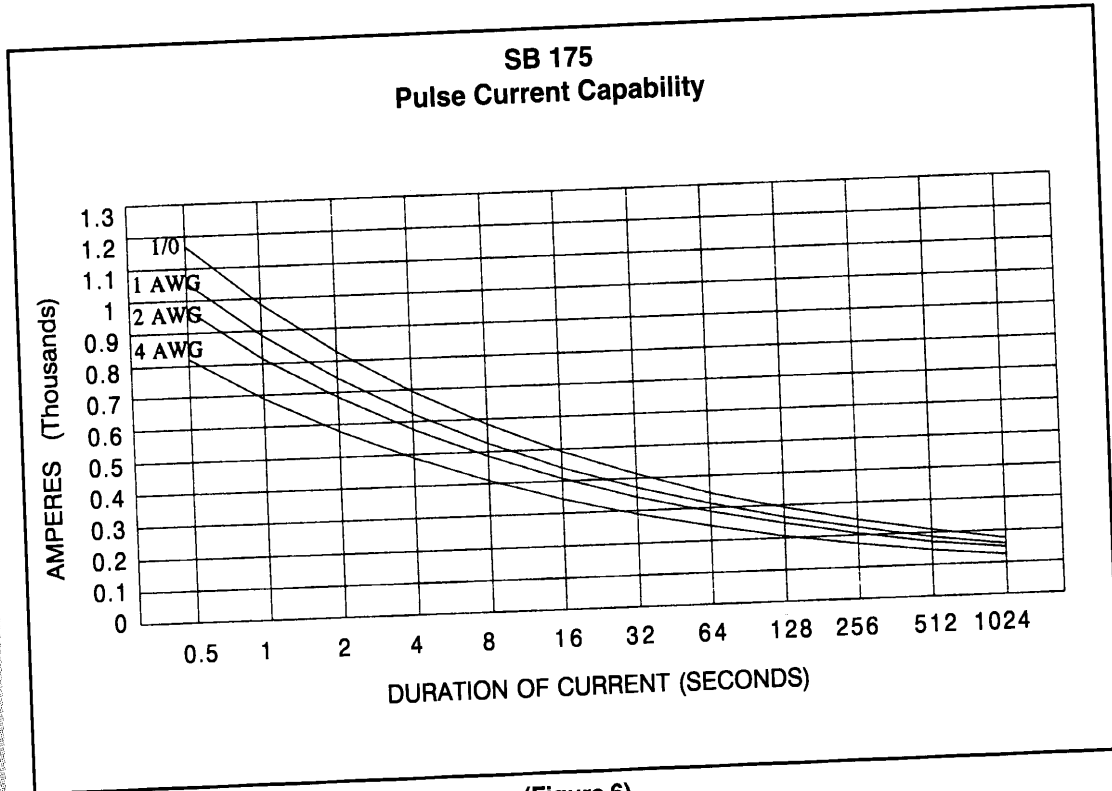
SB[®] Connectors

Operating Characteristics

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(Figure 5)



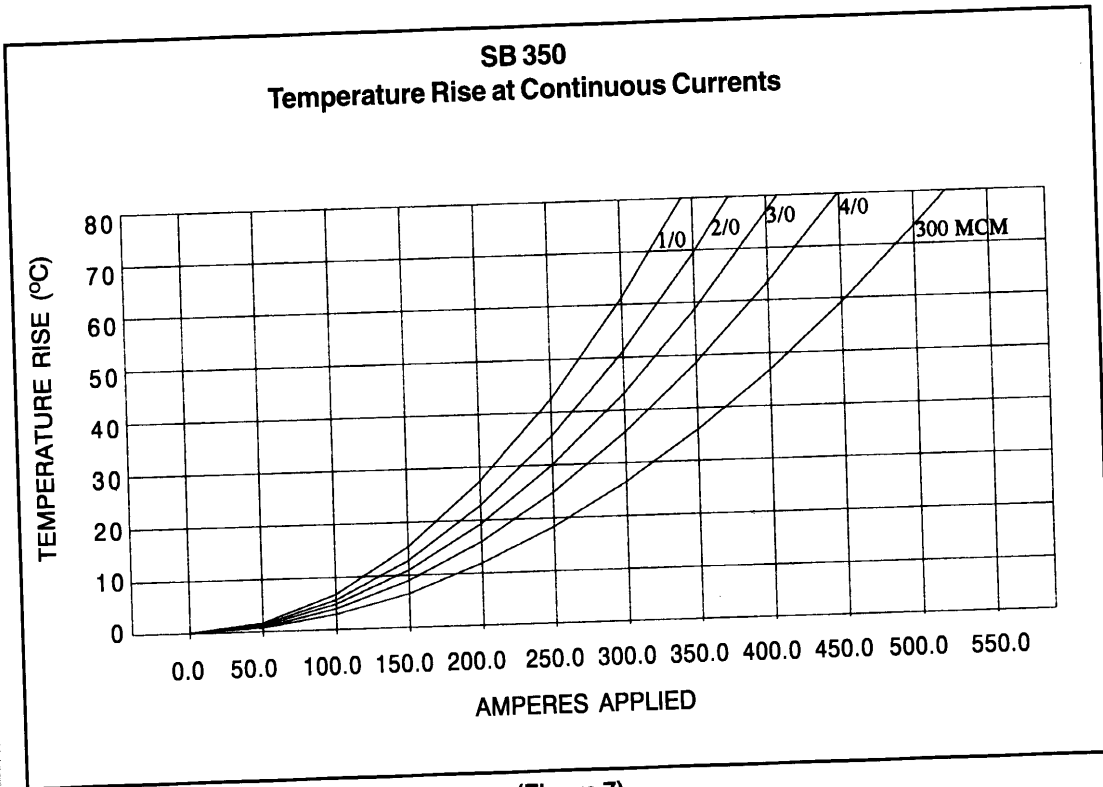
(Figure 6)

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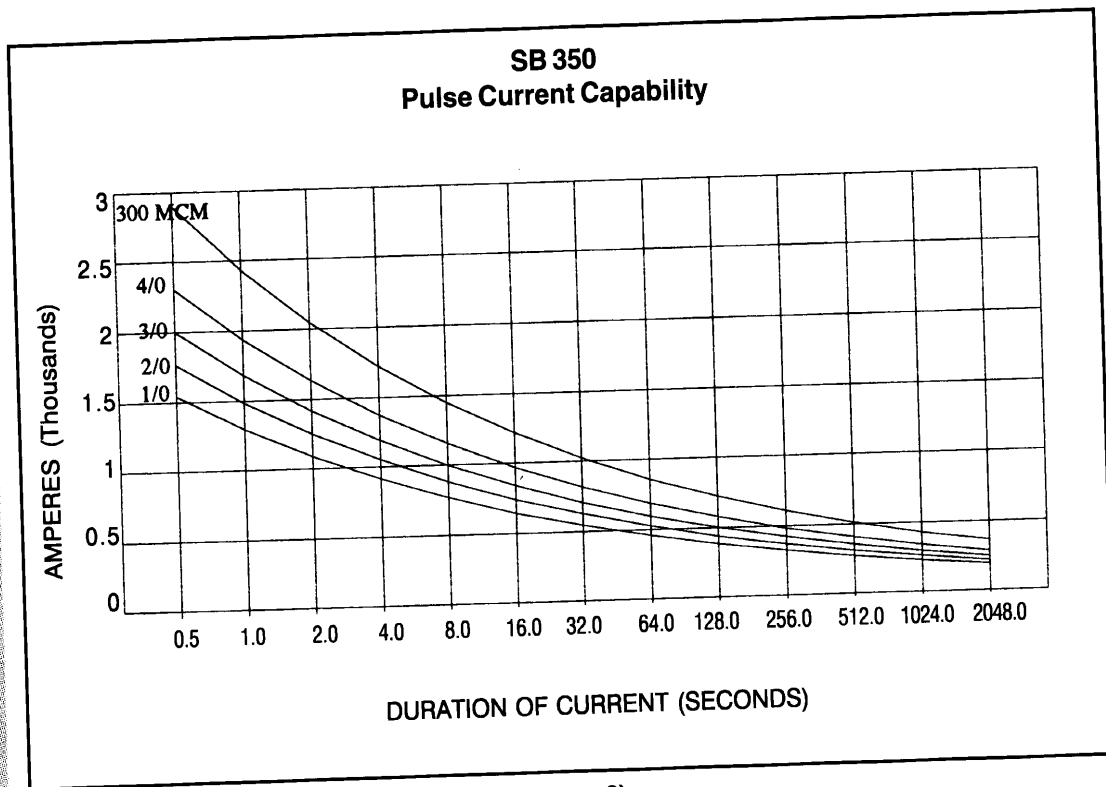
SB[®] Connectors

Operating Characteristics

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(Figure 7)



(Figure 8)

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