

SBX® Connectors

The Anderson Power SBX® Connector Concept

Anderson Power Products® SBX® 2 pole connector is available in 175 and 350 amps ratings for use to 600 Volts continuous AC or DC operation. Mechanical keys in connectors of the same color will mate and different colors may be selected to identify other voltages, thus preventing the mismatching of the power supply to the electrical output.

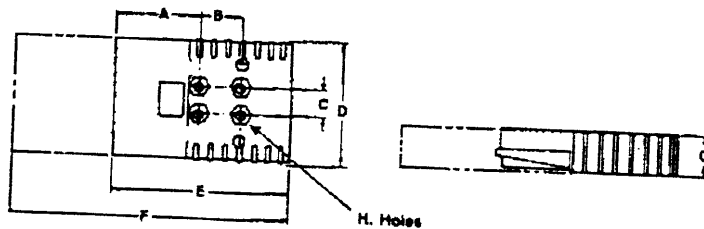
The single piece housing and unitized construction provide industrial quality and durability.

Individually replaceable contacts enable easy replacement of contacts.

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

The auxiliary contact provides for a secondary circuit.

The recessed contacts minimize the potential contact with live contacts.



Dimensions

Model	A		B	
	in.	mm	in.	mm
SBX175	1.94	49.2	1.13	28.5
SBX350	2.44	61.9	1.13	28.5
Model	C		D	
	in.	mm	in.	mm
SBX175	.63	15.9	2.80	71.2
SBX350	.63	15.9	3.37	85.7
Model	E		F	
	in.	mm	in.	mm
SBX175	3.63	85.3	5.76	146.3
SBX350	4.94	125.4	7.88	200.0
Model	G		H	
	in.	mm	in.	mm
SBX175	1.00	25.4	.26	6.7
SBX350	1.31	33.3	.26	6.7

Voltage Key Color Code

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

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Wiring Guide

A range of wire sizes from smallest to the largest conductor normally recommended for the SBX® 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.

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
B 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 57.

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Contacts & Housings

175 amp Series Connectors 2-Pole with auxiliary contacts

Catalog Number	Description	Housing Color	Wire AWG	Cable Well Diameter		Cable Size
				in.	mm	sq. mm
6370G1	Housing with	Gray	1/0	.44	11.1	53.5
6371G1	springs	Blue	1/0	.44	11.1	53.5
6372G1	2 contacts &	Orange	1/0	.44	11.1	53.5
6373G1	auxiliary	Yellow	1/0	.44	11.1	53.5
6378G1	contact kit	Red	1/0	.44	11.1	53.5
6387G1		Green	1/0	.44	11.1	53.5
6378G2	Housing with	Red	35MM			
6387G2	springs, 2	Green	35MM			
6370G2	contacts &	Gray	35MM			
6371G2	auxiliary	Blue	35MM			
6372G2	contacts	Orange	35MM			
6373G2		Yellow	35MM			

Housings & Contacts

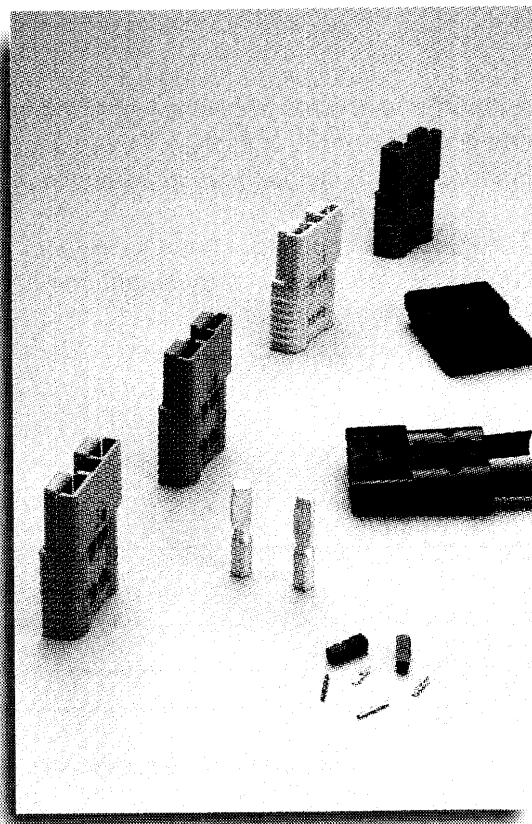
Catalog Number	Description	Housing Color	Wire AWG	Cable Well Diameter		Cable Size
				in.	mm	sq. mm
6374G1	Housings with	Gray	1/0	.44	11.1	3.5
6375G1	springs &	Blue	1/0	.44	11.1	53.5
6376G1	2 contacts	Orange	1/0	.44	11.1	53.5
6377G1		Yellow	1/0	.44	11.1	53.5
6379G1		Red	1/0	.44	11.1	53.5
6391G1		Green	1/0	.44	11.1	53.5
6374G2	Housings with	Gray	35MM			
6375G2	springs &	Blue	35MM			
6376G2	2 contacts	Orange	35MM			
6377G2		Yellow	35MM			
6379G2		Red	35MM			
6391G2		Green	35MM			

Housings

Catalog Number	Description	Housing Color
6380G1	Housings with	Gray
6381G1	springs	Blue
6382G1		Orange
6383G1		Yellow
6385G1		Red
6390G1		Green

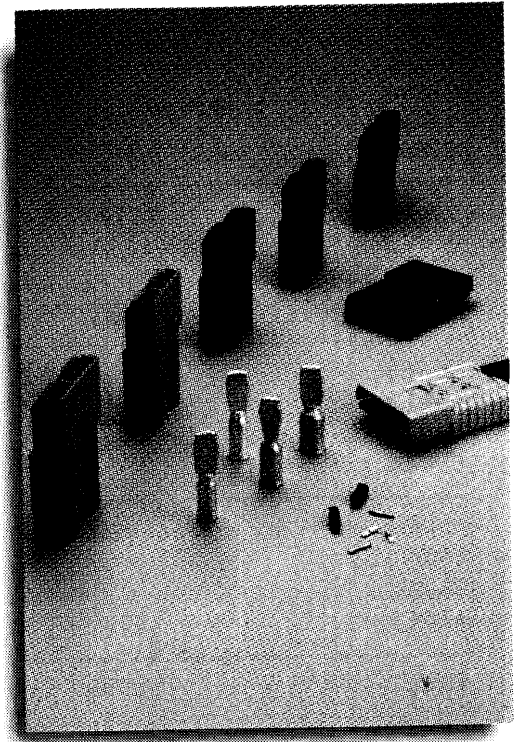
Contacts

Catalog Number	Description	Wire AWG	Cable Well Diameter		Cable Size
			in.	mm	sq. mm
6384G1	2 contacts	1/0	.44	11.1	53.5
6384G2	2 contacts	35MM			



350 Series Connectors 2-Pole with auxiliary contacts

Catalog Number	Description	Housing Color	Wire AWG	Cable Well Diameter		Cable Size
				in.	mm	sq. mm
6340G1	Housing with springs 2 contacts & auxiliary contact kit	Gray	2/0	.48	12.3	67.4
6340G2			3/0	.58	14.7	85.0
6340G3			4/0	.64	16.3	107.2
6340G5			300MCM	.77	19.4	152.0
6341G1		Blue	2/0	.48	12.3	67.4
6341G2			3/0	.58	14.7	85.0
6341G3			4/0	.64	16.3	107.2
6341G5			300MCM	.77	19.4	152.0
6342G1		Red	2/0	.48	12.3	67.4
6342G2			3/0	.58	14.7	85.0
6342G3			4/0	.64	16.3	107.2
6342G5			300MCM	.77	19.4	152.0
6343G1		Green	2/0	.48	12.3	67.4
6343G2			3/0	.58	14.7	85.0
6343G3			4/0	.64	16.3	107.2
6343G5			300MCM	.77	19.4	152.0
6359G1		Black	2/0	.48	12.3	67.4
6359G2			3/0	.58	14.7	85.0
6359G3			4/0	.64	16.3	107.2
6359G5			300MCM	.77	19.4	152.0
6360G1		Yellow	2/0	.48	12.3	67.4
6360G2			3/0	.58	14.7	85.0
6360G3			4/0	.64	16.3	107.2
6360G5			300MCM	.77	19.4	152.0
6368G1		Orange	2/0	.48	12.3	67.4
6368G2			3/0	.58	14.7	85.0
6368G3			4/0	.64	16.3	107.2
6368G5			300MCM	.77	19.4	152.0

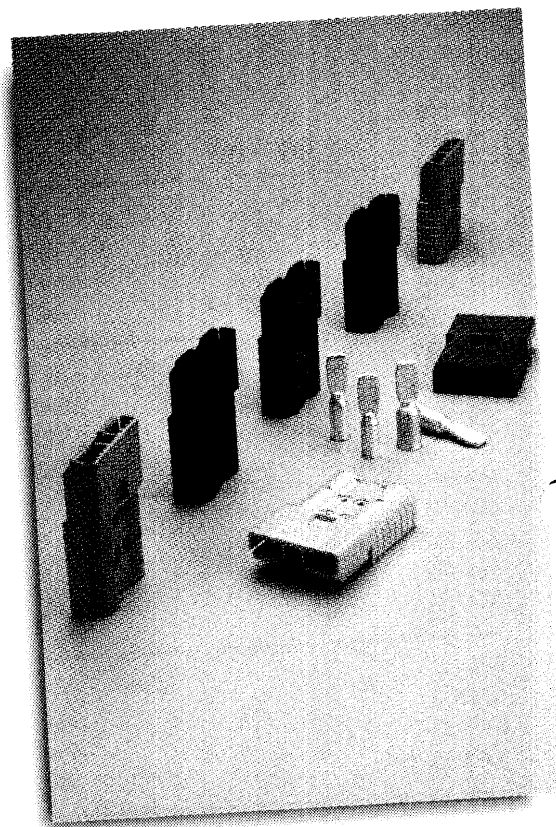


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350 Series Connectors 2-Pole

Catalog Number	Description	Housing Color	Wire AWG	Cable Well Diameter in.	mm	Cable Size sq. mm
6345G1	Housing with springs & 2 contacts	Gray	2/0	.48	12.3	67.4
6345G2			3/0	.58	14.7	85.0
6345G3			4/0	.64	16.3	107.2
6345G5			300MCM	.77	19.4	152.0
6346G1		Blue	2/0	.48	12.3	67.4
6346G2			3/0	.58	14.7	85.0
6346G3			4/0	.64	16.3	107.2
6346G5			300MCM	.77	19.4	152.0
6347G1		Red	2/0	.48	12.3	67.4
6347G2			3/0	.58	14.7	85.0
6347G3			4/0	.64	16.3	107.2
6347G5			300MCM	.77	19.4	152.0
6348G1		Green	2/0	.48	12.3	67.4
6348G2			3/0	.58	14.7	85.0
6348G3			4/0	.64	16.3	107.2
6348G5			300MCM	.77	19.4	152.0
6363G1		Black	2/0	.48	12.3	67.4
6363G2			3/0	.58	14.7	85.0
6363G3			4/0	.64	16.3	107.2
6363G5			300MCM	.77	19.4	152.0
6364G1		Yellow	2/0	.48	12.3	67.4
6364G2			3/0	.58	14.7	85.0
6364G3			4/0	.64	16.3	107.2
6364G5			300MCM	.77	19.4	152.0
6369G1		Orange	2/0	.48	12.3	67.4
6369G2			3/0	.58	14.7	85.0
6369G3			4/0	.64	16.3	107.2
6369G5			300MCM	.77	19.4	152.0



Housings

Catalog Number	Description	Housing Color
6350	Housing with springs	Gray
6351		Blue
6352		Red
6353		Green
6361		Black
6362		Yellow
6339		Orange

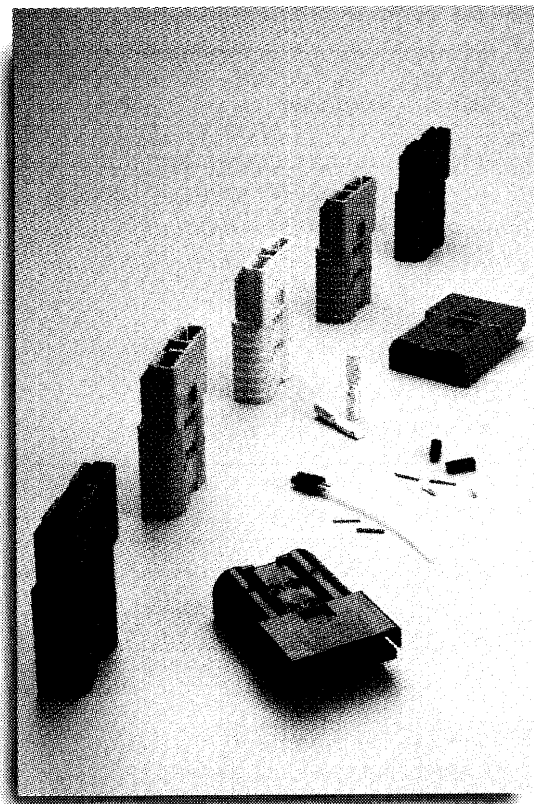
Contacts

Catalog Number	Description	Wire AWG	Cable Well Diameter in.	mm	Cable Size sq. mm
6354	2 Contacts	2/0	.48	12.3	67.4
6355		3/0	.58	14.7	85.0
6356		4/0	.64	16.3	107.2
6358		300MCM	.77	19.4	152.0

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350 Series Connectors 2-Pole

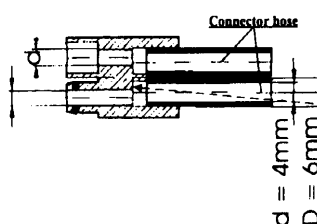
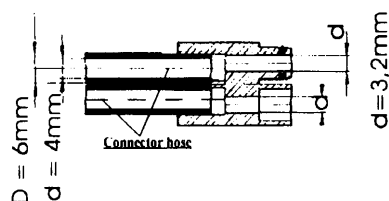
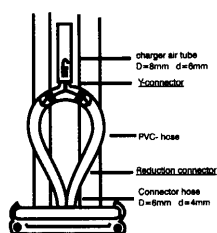
Catalog Number	Description	Housing Color	Cable Well Diameter mm	Cable Size sq. mm
6345G6	Housing with	Gray	.44	11.2
6346G6	springs	Blue	.44	11.2
6347G6	& 2 35MM	Red	.44	11.2
6348G6	contacts	Green	.44	11.2
6363G6		Black	.44	11.2
6364G6		Yellow	.44	11.2
6369G6		Orange	.44	11.2
6340G6	Housing with	Gray	.44	11.2
6341G6	springs,	Blue	.44	11.2
6342G6	2 35MM	Red	.44	11.2
6343G6	contacts	Green	.44	11.2
6359G6	& auxiliary	Black	.44	11.2
6360G6	contact kit	Yellow	.44	11.2
6380G6		Orange	.44	11.2



Air Supply System

Catalog Number	For Use With
75071-00	SBX 175 & 350

For supply of air to battery during charge.



SBX® Connectors

Accessories

Auxiliary Contact Kit

Catalog Number	Description	For Use With	Wire Size	
			AWG	Sq. mm
6344	2 each of: Powerpole*® housing with springs, contacts, retaining pins & cable ties	SBX175 SBX350	18 to 12	0.82 to 3.31

*POWERPOLE modular connector: 20 ampere. 600 volt rating.

Charger Key

Prevents charger and truck connector halves from engaging.

Catalog Number	Description	For Use With	Hardware Kit Includes
6337G1	Charger Key Kit	SBX175 & SBX350 connectors	1 key 2 pins

"A" Frame Handles

Polycarbonate handle relieves unnecessary strain on cables when disconnecting.

Catalog Number	Description	For Use With	Hardware Kit Includes
995G1	One handle with hardware	SBX175	4 screws 4 nuts 4 lockwashers
995G2	One handle with hardware	SBX350	4 screws 4 nuts 4 lockwashers

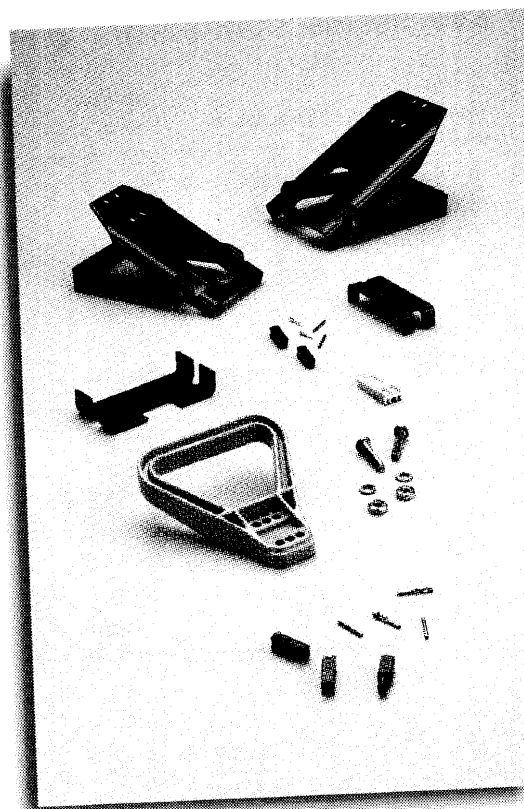
Manual Releases

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

Catalog Number	Description	Hardware Kit Includes
175 350		
993G2 993G1	Battery bracket with hardware	2 screws 2 nuts 2 lockwashers
994G2 994G1	Charger/Truck bracket with hardware	2 screws 2 nuts 2 lockwashers

Charger Key

Catalog Number	Description	For Use With
6365G1	Charger key & housing	SBX175
6366G2	Charger key & socket	SBX350
6367G1	Charger key & pin	



SBX® Connectors

Accessories

Cable Clamps

Catalog Number	Description	For Use With	Hardware Kit Includes
945G2	Use alone, with manual release or "A" Frame Handle	SBX175	1 screw 1 nut 1 lockwasher
911G2		SBX350	1 screw 1 nut 1 lockwasher

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

Reducing Bushings

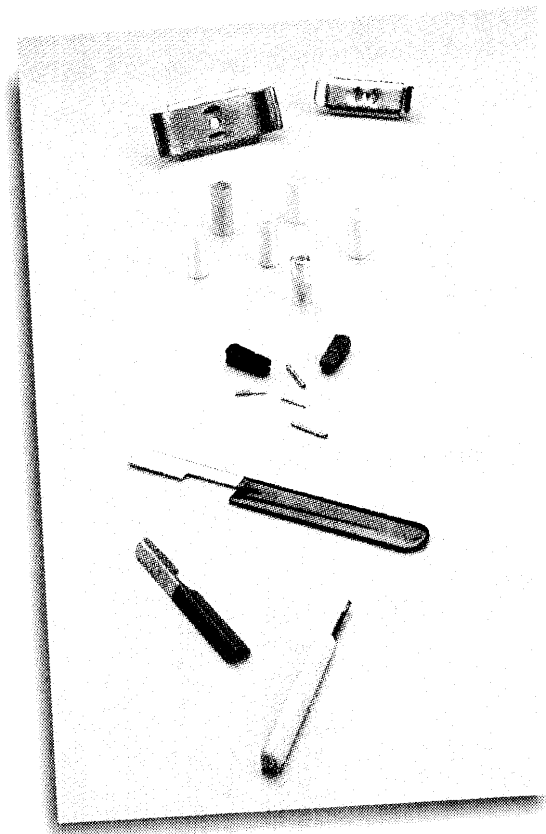
Assures proper fit for smaller cable sizes when crimping contacts.

Catalog Number	For Use With	AWG Wire Size
5687	SBX175	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	SBX350	2/0 to 1/0

Extraction Tools

To simplify disassembly procedures when removing contacts from housings.

Catalog Number	Tool Description	For Use With	Wire Size
969P1	Extraction tool with insulated handle	SBX175	
970P1		SBX350	
111038G2	Contact insertion/extraction tool	Auxiliary Contact Kit (Powerpole)	



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SBX[®] Connectors

Operating Characteristics

Ampere/Temperature Curves *(See Figures 1 through 4)*

Ampere/Temperature curves help to evaluate and rate

SBX[®] 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

SBX UL and CSA Reference

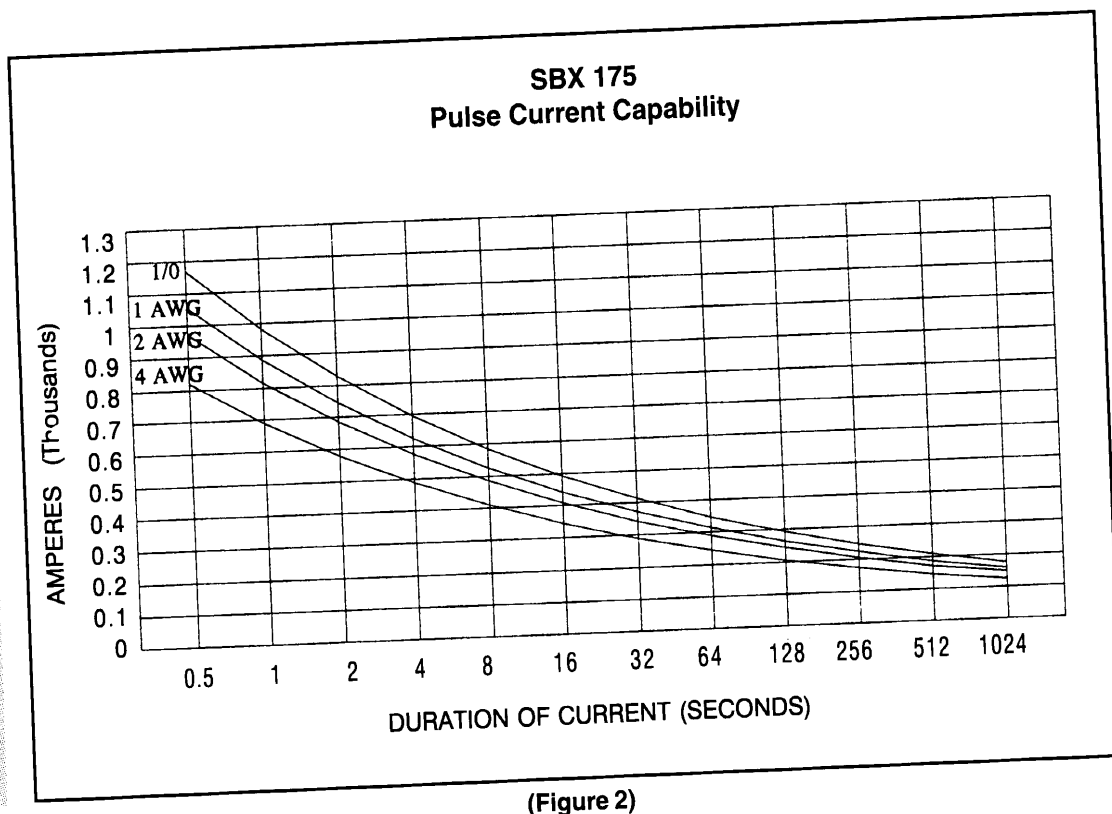
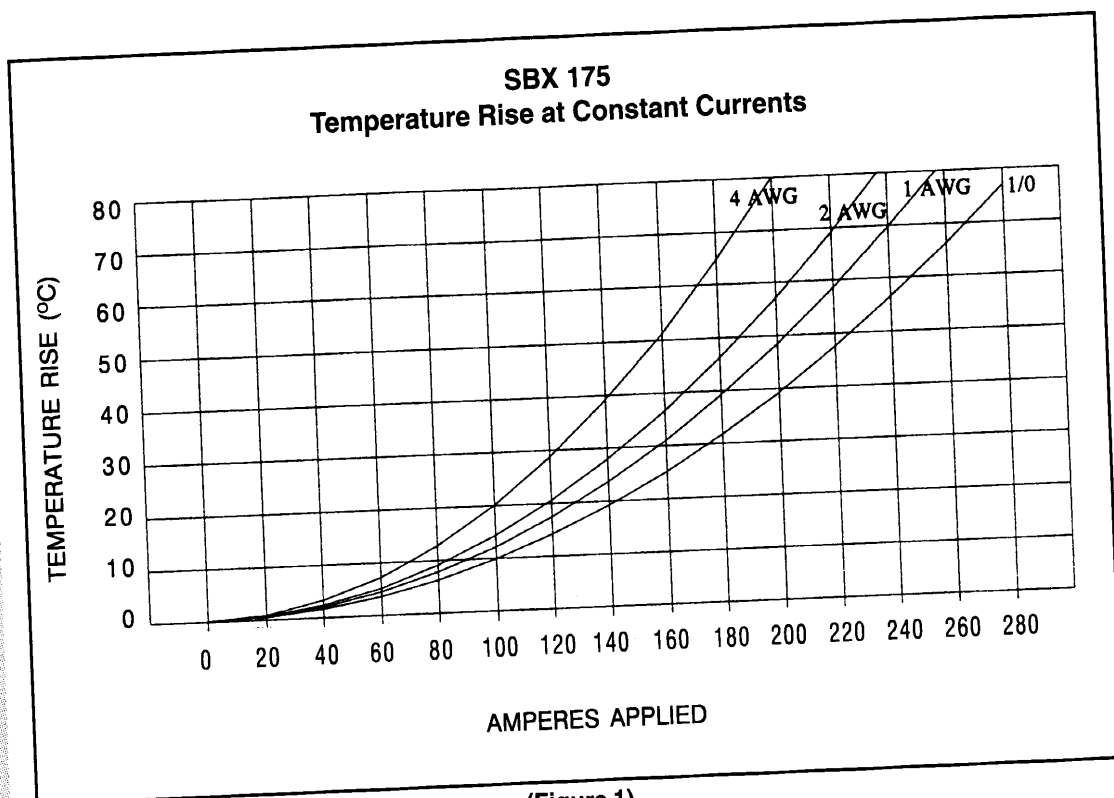
This equipment is an Underwriters Laboratories Inc.® recognized component, File E26226; it is also listed by the Canadian Standards Association as certified, Report LR25154.

Conversion Chart of American Wire Gauge to Metric System

Size AWG or MCM	Amperes Single Cond. 75°C Copper (NFA)	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

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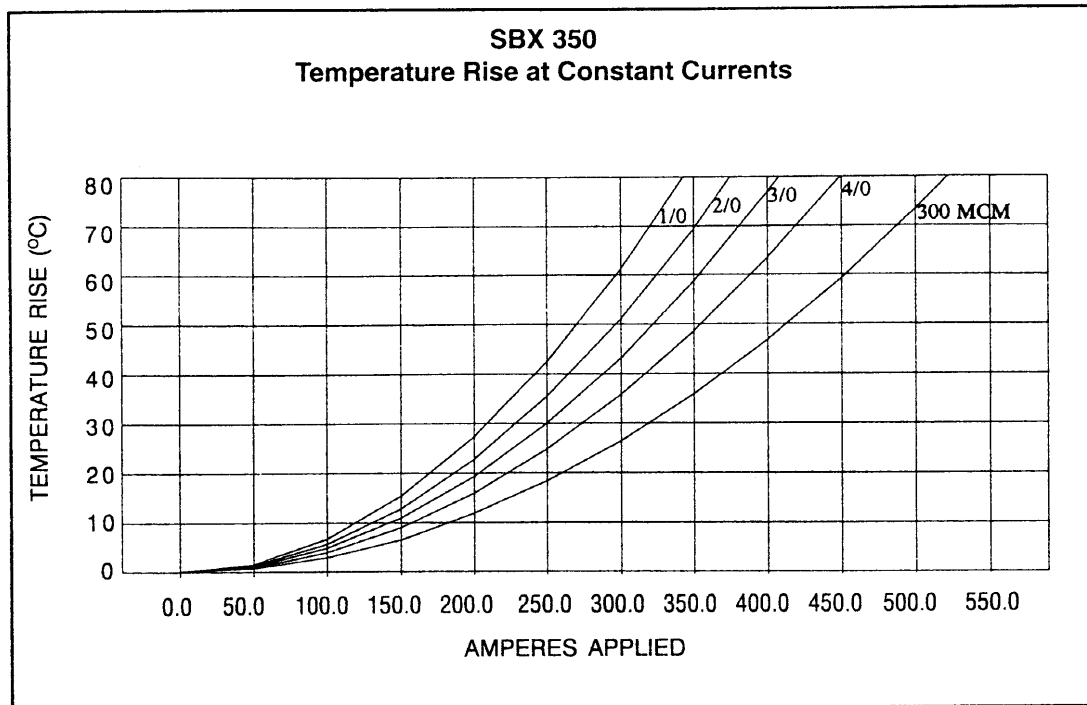
Operating Characteristics



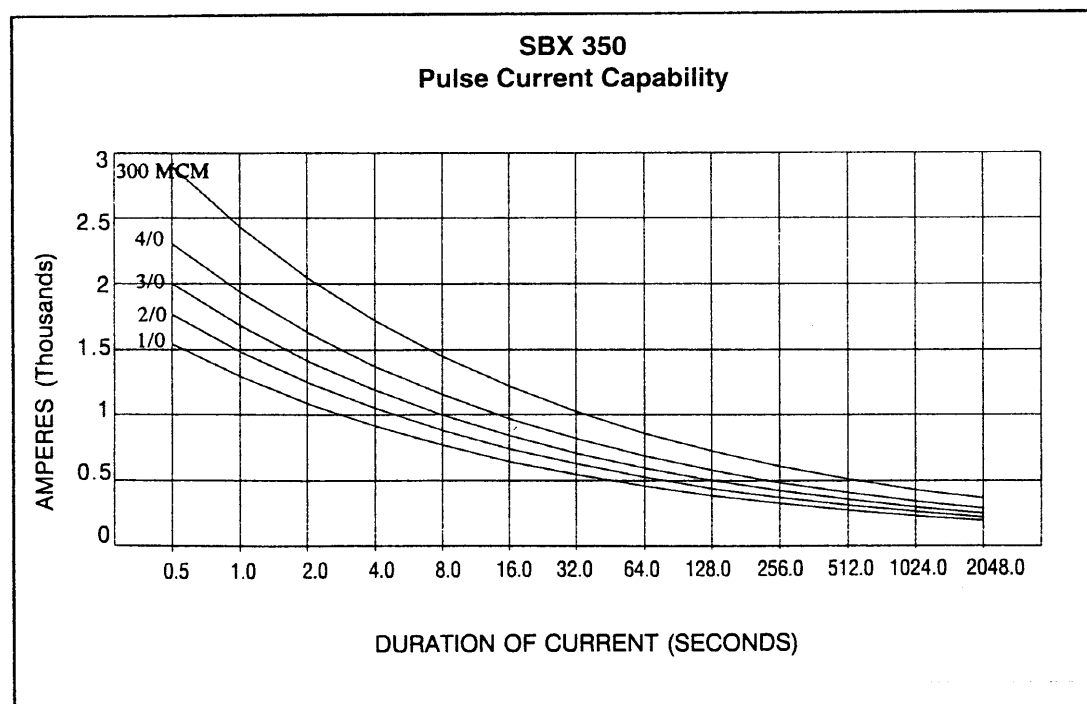
For equivalent millimeter wire sizes, reference the "Conversion Chart of American Wire Gauge to Metric System" in this section. Contact Anderson Power Products or authorized representative for graphs of wire sizes not shown.

SBX[®] Connectors

Operating Characteristics



(Figure 3)



(Figure 4)

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.