

Conductors

Table 1: Solid Copper Wire, American Wire Gage

Gage (AWG)	Nominal OD		Nominal Circular MIL Area	Nominal Weight (Lbs. per 1000 Ft.)	Nominal Resistance @ 68°F (Ω /1000 Ft.)
	Inches	mm			
10	.1019	2.60	10380.0	31.43	.9989
11	.0907	2.30	8234.0	24.92	1.260
12	.0808	2.05	6530.0	19.77	1.588
13	.0720	1.83	5178.0	15.68	2.003
14	.0641	1.63	4107.0	12.43	2.525
15	.0571	1.45	3260.0	9.858	3.184
16	.0508	1.29	2583.0	7.818	4.016
17	.0453	1.15	2050.0	6.200	5.064
18	.0403	1.02	1620.0	4.917	6.385
19	.0359	.912	1200.0	3.899	8.051
20	.0320	.813	1020.0	3.092	10.15
21	.0285	.724	812.1	2.452	12.80
22	.0253	.643	640.4	1.945	16.14
23	.0226	.574	511.5	1.542	20.36
24	.0201	.511	404.0	1.223	25.67
25	.0179	.455	320.4	.9699	32.37
26	.0159	.404	253.0	.7692	40.81
27	.0142	.361	201.5	.6100	51.47
28	.0126	.320	159.8	.4837	64.90
29	.0113	.287	126.7	.3836	81.83
30	.0100	.254	100.5	.3042	103.2
31	.0089	.226	79.7	.2413	130.1
32	.0080	.203	63.21	.1913	164.1
33	.0071	.180	50.13	.1517	206.9
34	.0063	.160	39.75	.1203	260.9
35	.0056	.142	31.52	.09542	331.0
36	.0050	.127	25.00	.07568	414.8
37	.0045	.114	19.83	.0613	512.1
38	.0040	.102	15.72	.04759	648.6
39	.0035	.089	12.20	.03774	847.8
40	.0031	.079	9.61	.02993	1080.0

Information from National Bureau of Standards Copper Wire Tables — Handbook 100.

Unparalleled Performance

Belden is one of only a very few cable manufacturers to draw and anneal its own conductors. This is a time-consuming process, but it allows us to ensure signal integrity, as well as proper physical characteristics.

In addition, the standards under which we design and manufacture our fiber optic cabling are among the strictest in the industry. The result is a comprehensive offering of products which give unparalleled performance and can satisfy your most demanding operating and environmental challenges.



For more information, contact Belden Technical Support: 1-800-BELDEN-1 • www.belden.com

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Table 2: Stranded Copper Wire, American Wire Gage

Gage (AWG)	Stranding (Nom. AWG)	Min. Average OD of Strand	Approximate OD		ASTM Min. Circular MIL Area	Min. Weight (Lbs./1000 Ft.)	Max. Resistance* @ 68°F (Ω/1000 Ft.)
			Inches	mm			
36	7x44	.0019	.006	.152	25	.076	414.8
34	7x42	.0024	.0075	.191	39.7	.121	260.9
32	7x40	.0030	.0093	.236	64	.195	164.1
32	19x44	.0018	.010	.254	64	.195	164.1
30 ♦	7x38	.0038	.012	.305	100	.304	112.0
30	19x42	.0023	.012	.305	100	.304	112.0
28 ♦	7x36	.0048	.015	.381	159	.484	70.7
28 ♦	19x40	.0029	.016	.406	159	.484	70.7
27	7x35	.0054	.017	.432	202	.614	55.6
26 ♦	7x34	.0060	.019	.483	253	.770	44.4
26	10x36	.0050	.021	.533	253	.770	44.4
26 ♦	19x38	.0036	.020	.508	253	.770	44.4
24 ♦	7x32	.0076	.024	.610	404	1.229	27.7
24	10x34	.0064	.024	.610	404	1.229	27.7
24 ♦	19x36	.0046	.024	.610	404	1.229	27.7
24 ♦	42x40	.0031	.023	.584	404	1.229	27.7
22 ♦	7x30	.0096	.030	.762	640	1.947	17.5
22 ♦	19x34	.0058	.031	.787	640	1.947	17.5
22	26x36	.0050	.030	.762	640	1.947	17.5
20 ♦	7x28	.0126	.038	.965	1020	3.103	10.9
20	10x30	.0101	.037	.940	1020	3.103	10.9
20 ♦	19x32	.0073	.037	.940	1020	3.103	10.9
20	26x34	.0063	.036	.914	1020	3.103	10.9
20 ♦	42x36	.0049	.038	.965	1020	3.103	10.9
18 ♦	7x26	.0152	.048	1.22	1620	4.93	6.92
18	16x30	.0101	.047	1.19	1620	4.93	6.92
18 ♦	19x30	.0092	.049	1.24	1620	4.93	6.92
18 ♦	42x34	.0062	.047	1.19	1620	4.93	6.92
18 ♦	65x36	.0050	.047	1.19	1620	4.93	6.92
16 ♦	7x24	.0192	.060	1.52	2580	7.85	4.35
16 ♦	19x29	.0117	.058	1.47	2580	7.85	4.35
16	26x30	.0100	.059	1.50	2580	7.85	4.35
16 ♦	65x34	.0063	.059	1.50	2580	7.85	4.35
16	105x36	.0050	.059	1.50	2580	7.85	4.35
14 ♦	7x22	.0242	.076	1.93	4110	12.50	2.73
14 ♦	19x26	.0147	.071	1.80	4110	12.50	2.73
14 ♦	42x30	.0099	.075	1.91	4110	12.50	2.73
14	105x34	.0063	.075	1.91	4110	12.50	2.73
12 ♦	7x20	.0305	.096	2.44	6530	19.86	1.71
12 ♦	19x25	.0185	.093	2.36	6530	19.86	1.71
12 ♦	65x30	.0100	.095	2.41	6530	19.86	1.71
12	165x34	.0063	.095	2.41	6530	19.86	1.71
10	37x26	.0167	.115	2.92	10380	31.58	1.08
10	65x28	.0126	.120	3.05	10380	31.58	1.08
10	105x30	.0099	.118	3.00	10380	31.58	1.08

*AWG 10 through 30 per UL Subject 13.

Belden has standardized on the stranded conductors used in the design of all Belden® products. These preferred constructions, based on standard industry practices, are marked with a ♦ symbol.

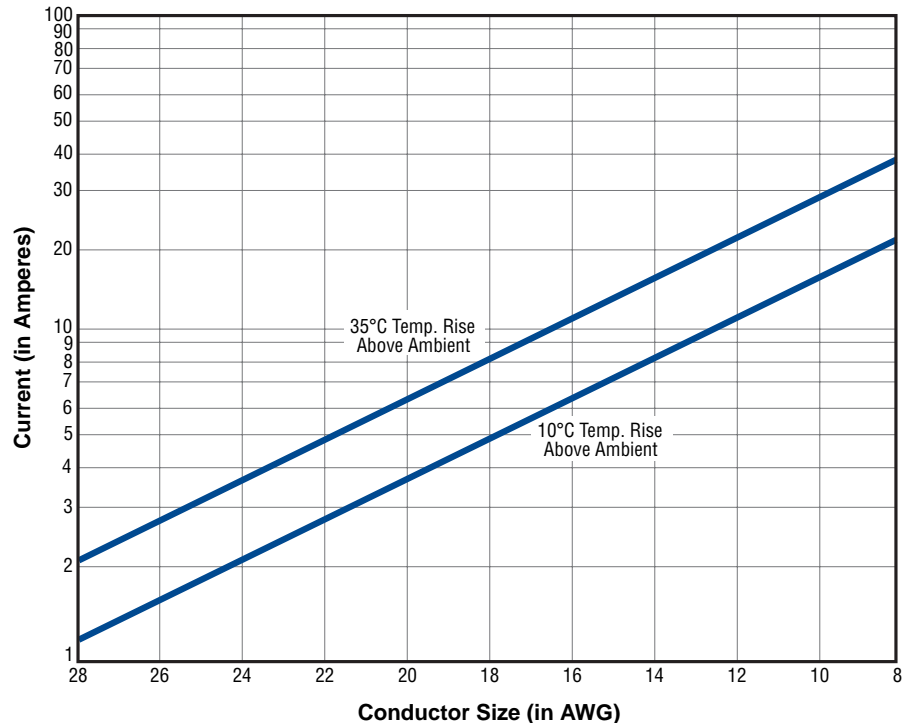
Conductors

Table 3: Current Ratings for Belden® Electronic Cables

The maximum continuous current rating for an electronic cable is limited by conductor size, number of conductors contained within the cable, maximum temperature rating of the cable, and environmental conditions such as ambient temperature and air flow. To use the current capacity chart, first determine conductor size, temperature rating, and number of conductors from the applicable product description for the cable of interest.

Next, find the current value on the chart for the proper temperature rating and conductor size. To calculate the maximum current rating/conductor, multiply the chart value by the appropriate conductor factor. The chart assumes cable is surrounded by still air at an ambient temperature of 25°C. Current values are in RMS Amperes and are valid for copper conductors only. For conditions other than specified, contact Belden Technical Support at: **1-800-BELDEN-1**.

Note: Current ratings are intended as general guidelines for low power electronic communications and control applications. Current ratings for power applications generally are set by regulatory agencies such as UL, CSA, NEC, and others.



Current Ratings

No. of Conductors*	Factor
1	1.6
2 to 3	1.0
4 to 5	.8
6 to 15	.7
16 to 30	.5

*Do not count shields unless used as conductor.

Conductors

Table 4: Metric / Imperial / AWG Equivalents

(Square Millimeters / Square Inches / Circular Mils / AWG)

Sq. mm	Sq. in.	Cir. mils	AWG	Sq. mm	Sq. in.	Cir. mils	AWG	Sq. mm	Sq. in.	Cir. mils	AWG
1000	1.550	1974000		55	.0853	108570		5.00	.00775	9870	
975	1.511	1924700		—	—	105600	1/0	4.75	.00736	9377	
950	1.472	1875300		50	.0775	98700		4.50	.00698	8883	
925	1.434	1826000		45	.0698	88830		4.25	.00659	8390	
900	1.395	1776600		—	—	83690	1	—	—	8230	11
875	1.356	1727300		40	.0620	78960		4.00	.00620	7896	
850	1.317	1677900		35	.0542	69090		3.75	.00581	7403	
825	1.279	1628600		—	—	66360	2	3.50	.00542	6909	
800	1.240	1579200		30	.0465	59220		—	—	6530	12
775	1.201	1529900		—	—	52620	3	3.25	.00504	6416	
750	1.163	1480500		25	.0388	49350		3.00	.00465	5922	
725	1.124	1431200		—	—	41740	4	2.75	.00426	5429	
700	1.085	1381800		20.0	.0310	39480		—	—	5180	13
675	1.046	1332500		19.5	.0302	38490		2.50	.00388	4935	
650	1.008	1283100		19.0	.0294	37510		2.25	.00349	4422	
625	.969	1233800		18.5	.0287	36520		—	—	4110	14
600	.930	1184400		18.0	.0279	35530		2.00	.00310	3948	
575	.891	1135100		17.5	.0271	34550		1.75	.00271	3455	
550	.853	1085700		17.0	.0264	33560		—	—	3260	15
525	.814	1036400		—	—	33090	5	1.50	.00233	2961	
500	.775	987000		16.5	.0256	32560		—	—	2580	16
475	.736	937700		16.0	.0248	31580		1.25	.00194	2468	
450	.698	888300		15.5	.0240	30600		—	—	2050	17
425	.659	839000		15.0	.0233	29610		1.00	.00155	1974	
400	.620	789600		14.5	.0225	28620		.90	.00140	1777	
375	.581	740300		14.0	.0217	27640		—	—	1620	18
350	.542	690900		13.5	.0209	26650		.80	.00124	1579	
325	.504	641600		—	—	26420	6	.75	.00116	1481	
300	.465	592200		13.0	.0201	25660		.70	.00109	1382	
275	.426	542900		12.5	.0194	24680		—	—	1290	19
250	.388	493500		12.0	.0186	23690		.60	.00093	1184	
225	.349	444200		11.5	.0178	22700		—	—	1029	20
200	.310	394800		11.0	.0171	21710		.50	.000775	987	
175	.271	345500		—	—	20820	7	—	—	—	
150	.233	296100		10.5	.0163	20730		—	—	—	
125	.1938	246800		10.0	.0155	19740		—	—	—	
—	—	211600	4/0	9.5	.01472	18753		—	—	—	
100	.1550	197400		9.0	.01395	17766		—	—	—	
95	.1472	187530		8.5	.01317	16779		—	—	—	
90	.1395	177660		—	—	16510	8	—	—	—	
—	—	167800	3/0	8.0	.01240	15792		—	—	—	
85	.1317	167790		7.5	.01163	14805		—	—	—	
80	.1240	157920		7.0	.01085	13818		—	—	—	
75	.1163	148050		—	—	13090	9	—	—	—	
70	.1085	138180		6.5	.01008	12831		—	—	—	
—	—	133100	2/0	6.0	.00930	11844		—	—	—	
65	.1008	128310		5.5	.00853	10857		—	—	—	
60	.0930	118440		—	—	10380	10	—	—	—	

To Convert:	Multiply by:
Inches to millimeters	25.4
Millimeters to inches	.03937