BELDEN
SENDING ALL THE RIGHT SIGNALS

Capabilities Bulletin

CB 003

CSA Tray Cables

Reliability – even in the harshest of environments – is the hallmark of Belden® CSA Tray cables. Variety is another key attribute of the line – we're sure to have the cable you need.

Belden Now Offers IndustrialTuff® Instrumentation, Thermocouple, VFD and Control Cables in CSA Tray Cable Configurations

Belden IndustrialTuff CSA Tray cables offer the type of quality and reliability that is consistent with your long term instrumentation, control and power needs. They are also ideal for all industries, including petrochemical, pharmaceutical, mining, power generation, wastewater treatment, pulp and paper, food processing and transportation.

This CSA Tray cable line includes 300V Instrumentation and Thermocouple Extension cables, 600V and 1000V Control and Power cables and 1000V VFD cables. All of these cables are UV/Sunlight Resistant, have FT4 ratings, and are suitable for Direct Burial installation or installations in hazardous locations.

300V Instrumentation Cables

These Instrumentation cable constructions use soft-annealed bare or tinned copper conductors with flame retardant PVC insulation (XLPE is an option) and PVC jackets. All cables have a nylon rip cord and are rated for -40°C Cold Bend, -25°C Cold Impact, with an installation temperature of -25°C.

300V Thermocouple Extension Cables

IndustrialTuff Thermocouple cables have the same ratings as standard 300V instrumentation cables, except that the thermocouple extension wire type determines the conductor material, i.e., EX, JX, KX or TX.

600V and 1000V Control and Power Cables

Belden's 600V and 1000V Control cables are installed in cable trays, ducts, and conduit—or they can be used in direct burial applications. They have soft-annealed bare or tinned copper conductors, XLPE insulations, and 90°C PVC jackets. A nylon ripcord is included in all cables. All are -40°C Cold Bend, -25°C Cold Impact, rated with an installation temperature of -25°C.

VFD Cables

Belden's 1000V VFD cables utilize three stranded BC circuit conductors in a symmetrical ground configuration. The 14 to 10 AWG cables utilize a foil/braid shield and the 8 to 4/0 AWG cables utilize a dual spiral copper tape shield. These dual shield configurations provide the lowest resistance path to ground as well as highly effective EMI/RFI noise protection. The oversized XLPE insulation provides the lowest capacitance available in a VFD Cable.

BELDEN
SENDING ALL THE RIGHT SIGNALS

300V Instrumentation & Thermocouple Tray Cable

Paired Constructions – Copper, EX, JX, KX or TX

No. of Pairs	Part Numbers				
	7 Strand Copper	Solid EX Chromel/ Constantan	Solid JX Iron/ Constantan	Solid KX Chromel/ Alumel	Solid TX Copper/ Constantan
20 AWG					
1	22000	21100	21114	21128	21142
2	22001	21101	21115	21129	21143
4	22002	21102	21116	21130	21144
6	22003	21103	21117	21131	21145
8	22004	21104	21118	21132	21146
10	22005	21105	21119	21133	21147
12	22006	21106	21120	21134	21148
16	22007	21107	21121	21135	21149
20	22008	21108	21122	21136	21150
24	22009	21109	21123	21137	21151
30	22010	21110	21124	21138	21152
36	22011	21111	21125	21139	21153
40	22012	21112	21126	21140	21154
50	22013	21113	21127	21141	21155
18 AWG					
1	22027	21156	21170	21184	21198
2	22028	21157	21171	21185	21199
4	22029	21158	21172	21186	21200
6	22030	21159	21173	21187	21201
8	22031	21160	21174	21188	21202
10	22032	21161	21175	21189	21203
12	22033	21162	21176	21190	21204
16	22034	21163	21177	21191	21205
20	22035	21164	21178	21192	21206
24	22036	21165	21179	21193	21207
30	22037	21166	21180	21194	21208
36	22038	21167	21181	21195	21209
40	22039	21168	21182	21196	21210
50	22040	21169	21183	21197	21211
16 AWG					
1	22054	21212	21226	21240	21254
2	22055	21213	21227	21241	21255
4	22056	21214	21228	21242	21256
6	22057	21215	21229	21243	21257
8	22058	21216	21230	21244	21258
10	22059	21217	21231	21245	21259
12	22060	21218	21232	21246	21260
16	22061	21219	21233	21247	21261
20	22062	21220	21234	21248	21262
24	22063	21221	21235	21249	21263
30	22064	21222	21236	21250	21264
36	22065	21223	21237	21251	21265
40	22066	21224	21238	21252	21266
50	22067	21225	21239	21253	21267

Cable Specifications

- CSA C22.2 #239 Control and Instrumentation
- CSA C22.2 #230 Type TC
- CSA FT4 70,000 BTU Flame Test
- PVC Insulation 90°C Dry & 75°C Wet
- XLPE Insulation Optional 90°C Dry and Wet
- -40°C Cold Bend, -25°C Cold Impact
- -25°C Installation temp
- Per CEC Part 1, Suitable for use in hazardous locations:
  Class 1 - Zone 2
  Class 2 - Division 2
- Sun Res/UV resistant
- Direct Burial

To Create a Part Number

Add suffixes for Conductor, Insulation, Jacket Type and Shielding as shown below:

A = Bare Copper Conductor or Thermocouple alloy, PVC insulation, PVC Jacket

B = Tinned Copper Conductor, PVC Insulation, PVC Jacket

C = Bare Copper Conductor or Thermocouple alloy, XLPE Insulation, PVC Jacket

D = Tinned Copper Conductor, XLPE Insulation, PVC Jacket

---

1 = Overall Foil Shield + Drain Wire

2 = Individual and Overall Foil Shield + Drain Wire

Sample Part Number 22001B2

= 300V, 2-Pair 20 AWG Tinned Copper Conductor cable with PVC Insulation and PVC Jacket, Individual and Overall Foil Shields

Thermocouple Color Codes

ANSI Symbol	Jacket Color	Insulation Color Code	
		Positive (+)	Negative (-)
EX	Purple	Purple	Red
JX	Black	White	Red
KX	Yellow	Yellow	Red
TX	Blue	Blue	Red

Copper Color Codes

Pairs/Triads	Color Combination
Pairs	Black & White
Triads	Black, White & Red

Triad Constructions, Copper Conductor

No. of Triads	Part Numbers		
	20 AWG 7 Strand	18 AWG 7 Strand	16 AWG 7 Strand
1	22014	22041	22068
2	22015	22042	22069
4	22016	22043	22070
6	22017	22044	22071
8	22018	22045	22072
10	22019	22046	22073
12	22020	22047	22074
16	22021	22048	22075
20	22022	22049	22076
24	22023	22050	22077
30	22024	22051	22078
36	22025	22052	22079

600 and 1000 Volt Control & Power Cable

Bare Copper Conductors, XLPE Insulation, PVC Jacket

No. of Conductors	Part Numbers					
	14 AWG 7 Strand		12 AWG 7 Strand		10 AWG 7 Strand	
	600V	1000V	600V	1000V	600V	1000V
2	21500	21300	21550	21350	21600	21400
3	21501	21301	21551	21351	21601	21401
4	21502	21302	21552	21352	21602	21402
5	21503	21303	21553	21353	21603	21403
6	21504	21304	21554	21354	21604	21404
7	21505	21305	21555	21355	21605	21405
8	21506	21306	21556	21356	21606	21406
9	21507	21307	21557	21357	21607	21407
10	21508	21308	21558	21358	21608	21408
11	21509	21309	21559	21359	21609	21409
12	21510	21310	21560	21360	21610	21410
13	21511	21311	21561	21361	21611	21411
14	21512	21312	21562	21362	21612	21412
15	21513	21313	21563	21363	21613	21413
16	21514	21314	21564	21364	21614	21414
17	21515	21315	21565	21365	21615	21415
18	21516	21316	21566	21366	21616	21416
19	21517	21317	21567	21367	21617	21417
20	21518	21318	21568	21368	21618	21418
21	21519	21319	21569	21369	21619	21419
22	21520	21320	21570	21370	21620	21420
23	21521	21321	21571	21371	21621	21421
24	21522	21322	21572	21372	21622	21422
25	21523	21323	21573	21373	21623	21423
26	21524	21324	21574	21374	21624	21424
27	21525	21325	21575	21375	21625	21425
28	21526	21326	21576	21376	21626	21426
29	21527	21327	21577	21377	21627	21427
30	21528	21328	21578	21378	21628	21428
31	21529	21329	21579	21379	21629	21429
32	21530	21330	21580	21380	21630	21430
33	21531	21331	21581	21381	21631	21431
34	21532	21332	21582	21382	21632	21432
35	21533	21333	21583	21383	21633	21433
36	21534	21334	21584	21384	21634	21434
37	21535	21335	21585	21385	21635	21435
38	21536	21336	21586	21386	21636	21436
39	21537	21337	21587	21387	21637	21437
40	21538	21338	21588	21388	21638	21438
41	21539	21339	21589	21389	21639	21439
42	21540	21340	21590	21390	21640	21440
43	21541	21341	21591	21391	21641	21441
44	21542	21342	21592	21392	21642	21442
45	21543	21343	21593	21393	21643	21443
46	21544	21344	21594	21394	21644	21444
47	21545	21345	21595	21395	21645	21445
48	21546	21346	21596	21396	21646	21446
49	21547	21347	21597	21397	21647	21447
50	21548	21348	21598	21398	21648	21448

No. of Conductors	Part Numbers							
	1/0 AWG 19 Strand		2/0 AWG 19 Strand		3/0 AWG 19 Strand		4/0 AWG 19 Strand	
	600V	1000V	600V	1000V	600V	1000V	600V	1000V
2	21668	21468	21671	21471	21674	21474	21677	21477
3	21669	21469	21672	21472	21675	21475	21678	21478
4	21670	21470	21673	21473	21676	21476	21679	21479

No. of Conductors	Part Numbers					
	8 AWG 7 Strand		6 AWG 7 Strand		4 AWG 7 Strand	
	600V	1000V	600V	1000V	600V	1000V
2	21650	21450	21653	21453	21656	21456
3	21651	21451	21654	21454	21657	21457
4	21652	21452	21655	21455	21658	21458

No. of Conductors	Part Numbers					
	3 AWG 7 Strand		2 AWG 7 Strand		1 AWG 19 Strand	
	600V	1000V	600V	1000V	600V	1000V
2	21659	21459	21662	21462	21665	21465
3	21660	21460	21663	21463	21666	21466
4	21661	21461	21664	21464	21667	21467

Cable Specifications

- CSA C22.2 #230 Type TC
- CSA C22.2 #239 Control and Instrumentation (600V only)
- CSA C22.2 #38 (1000V only)
- Bare bonding conductor sized per Table 16 of the CEC
- CSA FT4 70,000 BTU Flame Test
- 90°C Dry & Wet
- -40°C Cold Bend, -25°C Cold Impact
- -25°C Installation temp
- Per CEC Part 1, Suitable for use in hazardous locations:
  Class 1 - Zone 2
  Class 2 - Division 2
- Sunlight resistant/UV resistant
- Direct Burial

Color Codes

No. of Conductors	Color Combination
2	Black & White
3	Black, Red & Blue
4	Black, Red, Blue & White
5 or more	Black & Number Coded

To Create a Part Number

Add suffix "S" for Overall Foil Shielding

Sample Part Number 21500S

= 2 conductor #14 AWG Bare Copper Conductor with XLPE Insulation, PVC Jacket and Overall Foil Shield 600V CSA Tray Control Cable

BELDEN
SENDING ALL THE RIGHT SIGNALS

Variable Frequency Drive Cable

1000V CSA TC

Cable Specifications

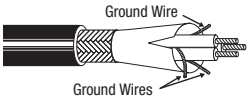
- CSA C22.2 #38 (1000V)
- CSA C22.2 #230 Type TC
- CSA FT4 70,000 BTU Flame Test
- 90°C Dry and Wet
- -40°C Cold Bend, -25°C Cold Impact
- -25°C Installation temp
- Per CEC Part 1, Suitable for use in hazardous locations:
  Class 1 - Zone 2
  Class 2 - Division 2
- Sun Res/UV resistant
- Direct Burial

Belden's line of VFD cables, with foil/braid or copper tape shield, is offered in 14–4/0 AWG. The oversized XLPE insulation provides the lowest capacitance available in a VFD cable. Its highly effective dual shielding provides the lowest resistance to ground path, which improves common mode current containment. Included is a symmetrical ground configuration that provides a balanced ground system. Cables are round and smooth for proper sealing of glands and molding applications.

14-10 AWG with Foil/Braid Shield - Symmetrical Design

The 85% braid shield coverage offers optimum EMI low frequency noise protection, while the 100% aluminum/Mylar tape offers RFI high frequency noise protection.

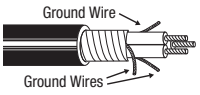
Description	Part No.	AWG	Conductor Stranding
Three Stranded BC Circuit Conductors • 3 Symmetrical TC Grounds • Overall Beldfoil® + 85% TC Braid Shield (ICEA Method 4 Color Code: Black and Numbered)			
XLPE Insulated Circuit Conductors • Black Sunlight- and Oil-resistant PVC Jacket			
1000V CSA TC FT4 RW90 Circuit Conductors	**29550**	14	7 Strands
	29551	12	7 Strands
	29552	10	7 Strands



8-4/0 AWG With Copper Tape Shield-Symmetrical Design

The spirally applied dual copper tape shield provides improved flexibility and EMI/RFI noise protection.

Description	Part No.	AWG	Conductor Stranding
Three Stranded BC Circuit Conductors • (3) Symmetrical BC Grounds • 2 Spiral Copper Tape Shields			
XLPE Insulated • Black Sunlight- and Oil-resistant PVC Jacket			
1000V CSA TC FT4 RW90 Circuit Conductors	**29553**	8	7 Strands
	29554	6	7 Strands
	29555	4	7 Strands
	29556	2	7 Strands
	29557	1	19 Strands
	29558	1/0	19 Strands
	29559	2/0	19 Strands
	29560	3/0	19 Strands
	29561	4/0	19 Strands



Products listed are subject to minimum order quantities. Contact Customer Service at 1.800.223.5336