

Belden IndustrialTuff® Cables

Introduction

Tough Cables for Tough Environments

Today, more than ever, manufacturing productivity depends upon seamless data communication and automation systems. And both depend upon high-performance cabling solutions.

Depend on Belden

Belden has developed the world's most comprehensive line of industrial cabling solutions for applications like yours: whether you are networking your factory floor or your process equipment and devices to their controllers...and on to the control room, or relaying data between the control room, the engineering department, and remote manufacturing sites—or, all of the above. From your petrochemical, automotive manufacturing, pharmaceutical, power generation, pulp and paper, metals, food and beverage, or general manufacturing plant to your corporate headquarters—and everywhere in between—Belden has your cabling solution.

Most importantly you can have the peace-of-mind that is inherent with the use of Belden products since all Belden cables are manufactured in ISO 9001:2000 certified facilities to the industry's highest standards of quality, using the most advanced equipment, systems, controls and processes available.

Belden cables give you the performance you need day after dependable day.

Innovative Technology

Bonded-Pair™ Cable

Many DataTuff® Industrial Ethernet cables feature Belden's patented bonded-pair technology. Bonded-pairs provide *Installable Performance*®—superior electrical performance even after the stresses of installation. Bonded-pairs exhibit the most robust and reliable electrical performance in the industry.

Shielding

Effective cable shielding for protection from noise interference remains critical with evolving industrial technology. Belden's shielding designs and testing methods ensure signal integrity and a dependable cable in the presence of electrical noise.

Belden's exclusive patented Beldfoil® design, with its aluminum/polyester foil, was the first shield to offer 100 percent cable protection against radiated emission and ingress at audio and radio frequencies.

Armoring

Belden's innovative armoring technology delivers maximum physical protection in harsh environments. Additional benefits include reduced cost of conduit, easier installation and re-routing, plus additional shielding.

Belden has the capability to protect data, electronic, instrumentation and control cables with interlocking steel or aluminum armor as well as continuous corrugated aluminum armor. Smooth or corrugated protective metal tapes are also available.

Insulation and Jacket

Belden formulates many of its own insulation and jacket compounds. As a result, they provide superior performance under a variety of hostile environmental conditions. See "Technical Information" on pages 125–126 for further details.

Intrinsically Safe Wiring

In accordance with NEC Article 504, intrinsically safe cables are colored blue for easy identification. Belden offers several industrial cables in intrinsically safe blue to meet your requirements for intrinsically safe wiring. Contact the NEC and/or your local inspector for specific guidelines.

Custom Capabilities

Most of our industrial cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find an Industrial cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

Overall Jacket

Prefix	Material
1	PVC
3	CPE
4	TPE
5	HDPE
6	Oil Res. II
7	Haloarrest® (LSZH)

Armor

Prefix	Material
2	Aluminum Interlock
3	Steel Interlock
4	Aluminum Belclad®
5	Steel Belclad
6	Copper Belclad
8	Continuous Armor

Example: 343016 is cable part no. 3016 with CPE outer jacket and aluminum Belclad armoring.

Audio, Control and Instrumentation

150V, 80°C • Unshielded



- UL AWM Style (Except 8442)

- NEC: CMG
- CEC: CMG FT4

Part No.	Conductors	Color Code	OD (Nom)		Insulation Thickness		Jacket Thickness	
			Inch	mm	Inch	mm	Inch	mm

22 AWG • PVC/PVC

Stranded (7 x 30) TC Conductors • PVC Insulation • Cabled • Chrome PVC Jacket								
8442	2	Black, Red	.170	4.32	.016	.41	0.25	.64
8443	3	Black, Red, Green	.172	4.37				
8444	4	Chart 1	.185	4.70				
8445	5	Chart 1	.194	4.93				
9430	7	Chart 1	.214	5.44	.011	.28	.032	.81
9421	8	Chart 1	.229	5.82				
9423	9	Chart 1	.244	6.20				
8456	10	Chart 1	.264	6.71				
8457	12	Chart 1	.272	6.91				
8458	15	Chart 1	.315	8.00				
9431	20	Chart 1	.345	8.76	.011	.28	.040	1.02
8459	25	Chart 1	.387	9.83				
9432	30	Chart 1	.400	10.16				
9433	40	Chart 1	.455	11.56				
9434	50	Chart 1	.500	12.70	.011	.28	.045	1.14

300V, 60°C • Foil Shield



- AWM Style

- NEC: CM
- CEC: CM
- NEC: CL3 (8618)

Part No.	Conductors	Color Code	OD (Nom)		Insulation Thickness		Jacket Thickness		Capacitance*	
			Inch	mm	Inch	mm	Inch	mm	pF/Ft	pF/m

Stranded TC Conductors • Polyolefin Insulation • Cabled • Overall Beldfoil® Shielding • Stranded TC Drain Wire • Brown PVC Jacket

22 AWG • 7 x 30 • 22 AWG Drain Wire • Polyolefin/PVC

8771	3	Black, White, Clear	.199	5.05	.017	.43	.033	.84	41	134
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20 AWG • 7 x 28 • 22 AWG Drain Wire • Polyolefin/PVC

8772	3	Black, White, Clear	.218	5.54	.017	.43	.033	.84	51	167
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18 AWG • 16 x 30 • 20 AWG Drain Wire • Polyolefin/PVC

8770	3	Black, White, Clear	.246	6.25	.018	.46	.033	.84	48	157
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16 AWG • 19 x 29 • 18 AWG Drain Wire • Polyolefin/PVC

8618	3	Black, White, Clear	.327	8.3	.032	.81	.031	.79	50	164
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*One conductor to other conductors connected to shield.

TC = Tinned Copper • PVC = Polyvinyl Chloride