

CB 001

## Instrumentation and Control Cables

Reliability — even in the harshest of environments — is the hallmark of Belden® Instrumentation and Control cables. No matter what type of insulation, conductor count, gauge size, jacket, armor or rating we can meet your needs.



### **Belden Now Offers IndustrialTuff® Instrumentation and Control Cables that Comply with ICEA Standards, TC-ER and TC-LS Ratings**

When it's time to specify cabling for your instrumentation, control and power needs, you'll find that Belden's IndustrialTuff cables offer the type of quality and reliability that is consistent with your long-term needs. And to ensure top performance in even the harshest of environments, Belden cables are available with multiple armoring and jacketing options — making them ideal for all industries, including petrochemical, pharmaceutical, mining, power generation, wastewater treatment, pulp and paper, food processing and transportation.

The Belden Instrumentation and Control product line consists of 300V Power Limited Tray (PLTC) instrumentation cables, thermocouple extension cables and thermocouple wire and 600V TC instrumentation and control cables.

#### **300V PLTC Instrumentation Cables**

These constructions use soft annealed bare or tinned copper conductors with flame retardant PVC insulation and jackets. (Other insulation and jacket options are available.) A nylon rip cord is included in all PVC/PVC instrumentation cables. All cable jackets are resistant to sunlight, moisture and vapor penetration and all products are Indoor/Outdoor rated. PVC/PVC products, with at least three conductors of 20 AWG or larger, are rated for direct burial. Multiple pair or triad cables have each pair/triad numbered for ease of identification.

#### **300V Thermocouple Extension Cables and Thermocouple Wire**

The thermocouple extension wire type determines the conductor material. The insulations and jackets are either FEP or PVC. A nylon rip cord is included in all PVC-jacketed thermocouple extension cables.

#### **600V TC Instrumentation and Control Cables**

600V TC Instrumentation and Control Cables are installed in cable trays, ducts and conduit and can be used in direct burial applications (PVC-Nylon/PVC, XLPE/PVC, and XLP/ Haloarrest® constructions only). All products are Indoor/Outdoor rated and are sunlight resistant. 600V cables are used extensively in manufacturing facilities — especially the petrochemical, steel, pulp and paper, cement, and mining industries.

These cables utilize soft annealed bare or tinned copper conductors; they are PVC insulated with a nylon-overcoat; jacketed with 90°C PVC; and use TFN, TFFN or THHN style singles. (XLPE insulated cables use XHHW-2 or RFH-2 rated singles.) Other insulation and jacket combinations are available as specials. A nylon rip cord is included in all PVC-Nylon/PVC instrumentation cables. Multiple pairs or triad cables have each pair/triad numbered for ease of identification. Armored and MC-rated products are available as specials.

#### **Intrinsically Safe**

All instrumentation and control cables are available (as an option) with a Blue jacket for intrinsically safe applications.



## 300V Cables

	Instrumentation Cable
<b>Conductors</b>	Pairs or Triads Bare or Tinned Copper
<b>AWG</b>	22 – 12 AWG
<b>Shielding Options</b>	Individually Foil Shielded
	Overall Foil Shielded
	Individually and Overall Foil Shielded
	Overall Tinned Copper Braided† Copper Tape†

Insulation	Jacket	PLTC	ITC	PLTC-ER	CMG or CL3	CMP or CL3P	Flame Tests	Direct Burial	ICEA S-73-532	ICEA S-82-552	ICEA T-29-520
PVC	PVC	●	●	▲	●		UL1685 Vertical Tray, CSA FT4, IEEE 1202/383	●*	Special†	Special†	●
XLPE	PVC	●	●				UL1685 Vertical Tray, [CSA FT4, IEEE 1202/383 as specials]†		Special†	Special†	Special†
TPE	TPE	●					UL1685 Vertical Tray, CSA FT1				
XLPE	CPE	●		▲			UL1685 Vertical Tray, [CSA FT4, IEEE 1202/383 as specials]†		Special†	Special†	Special†
XLPE	Haloarrest*	●					UL1685 Vertical Tray, CSA FT1				

● Standard construction. † Special construction. 5000 ft. minimum order. \*3 conductors or more and 20 AWG or larger.  
▲ To specify PLTC-ER (Exposed Run) rated cables, order standard 1000 or 3000 series part number with E suffix.

	Thermocouple Extension Cable & Thermocouple Wire
<b>Conductors</b>	Pairs Thermocouple Type KX, TX, EX, JX, E, J, K, T
<b>AWG</b>	20, 16 AWG; Other AWG sizes available as specials
<b>Shielding Options</b>	Individually Foil Shielded†
	Overall Foil Shielded
	Individually and Overall Foil Shielded
	Overall Tinned Copper Braided† Copper Tape†

Insulation	Jacket	PLTC	ITC	PLTC-ER	CMG or CL3	CMP or CL3P	Flame Tests	Direct Burial	ICEA S-73-532	ICEA S-82-552	ICEA T-29-520
PVC	PVC	●	●	▲	●		UL1685 Vertical Tray, CSA FT4, IEEE 1202/383	●*	Special†	Special†	●
XLPE	PVC	●	●				UL1685 Vertical Tray, [CSA FT4, IEEE 1202/383 as specials]†		Special†	Special†	Special†
TPE	TPE	●					UL1685 Vertical Tray, CSA FT1				
XLPE	CPE	●		▲			UL1685 Vertical Tray, CSA FT1 [CSA FT4, IEEE 1202/383 as specials]†		Special†	Special†	Special†
XLPE	Haloarrest*	●					UL1685 Vertical Tray, CSA FT1				
FEP	FEP	●			●		UL1685 Vertical Tray, CSA FT1 UL 910 Plenum				

● Standard construction. † Special construction. 5000 ft. minimum order. \*3 conductors or more and 20 AWG or larger.  
▲ To specify PLTC-ER (Exposed Run) rated cables, order standard 1000 or 3000 series part number with E suffix.

## 600V Cables

	Instrumentation Cable
<b>Conductors</b>	Pairs or Triads Bare or Tinned Copper Thermocouple Conductors†
<b>AWG</b>	18 – 12 AWG 10 – 4/0 AWG†
<b>Shielding Options</b>	Individually Foil Shielded†
	Overall Foil Shielded
	Individually and Overall Foil Shielded
	Overall Tinned Copper Braided† Copper Tape†

Insulation	Jacket	TC	TC-LS	TC-ER	Flame Tests	Direct Burial	ICEA S-73-532	ICEA S-82-552	ICEA S-61-402	ICEA S-66-524	ICEA T-29-520	MSHA	WTTCC
PVC-Nylon	PVC	●		▲	UL1685 Vertical Tray, CSA FT4, IEEE 1202/383	●	●	Special†	●		●	■	Special†
XLPE	PVC	●		▲	UL1685 Vertical Tray, CSA FT4, IEEE 1202/383 VW-1 Singles	●	●	●	●	●	●		Special†
TPE	TPE	●			UL1685 Vertical Tray, CSA FT1								Special†
XLPE	CPE	●		▲	UL1685 Vertical Tray, CSA FT4, IEEE 1202/383 VW-1 Singles	●	●	●	●	●	●		Special†
XLPE	Haloarrest*	●	●	▲	UL1685 Vertical Tray, CSA FT1, IEEE 1202/383*	●					●		Special†

● Standard construction. † Special construction. 5000 ft. minimum order. \* Standard in 12 AWG, 9 conductor and larger. Special in 12 AWG, 8 conductor and smaller.  
VW-1 singles as specials only. ▲ To specify TC-ER (Exposed Run) rated cables, order standard 1000 or 3000 series part number with E suffix. ■ 18 AWG - 10 AWG.

	Control Cable
<b>Conductors</b>	Multi-Conductors Bare or Tinned Copper
<b>AWG</b>	18 – 1 AWG 1/0 – 4/0 AWG†
<b>Shielding Options</b>	Overall Foil Shielded
	Overall Tinned Copper Braided† Copper Tape†
<b>Ground Wire</b>	Non-insulated, bare copper ground wires are included for constructions 8 – 1 AWG. Available on other constructions as specials.

Insulation	Jacket	TC	TC-LS	TC-ER	Flame Tests	Direct Burial	ICEA S-73-532	ICEA S-95-658	ICEA S-61-402	ICEA S-66-524	ICEA T-29-520	MSHA	WTTCC
PVC-Nylon	PVC	●		▲▲	UL1685 Vertical Tray, CSA FT4, IEEE 1202/383	●	●	●	●		●	■	Special†
XLPE	PVC	●		▲▲	UL1685 Vertical Tray, CSA FT4, IEEE 1202/383 VW-1 Singles	●	●	●	●	●	●		Special†
TPE	TPE	●			UL1685 Vertical Tray, CSA FT1								Special†
XLPE	CPE	●		▲▲	UL1685 Vertical Tray, CSA FT4, IEEE 1202/383 VW-1 Singles	●	●	●	●	●	●		Special†
XLPE	Haloarrest*	●	●	▲▲	UL1685 Vertical Tray, CSA FT1, IEEE 1202/383*	●					●		Special†
PE/PVC (20-10)	PVC or CPE						●	●	●				Special†

● Standard construction. † Special construction. 5000 ft. minimum order. ▲▲ To specify TC-ER (Exposed Run) rated control cable, simply replace the second digit of the part number from a Z to an 8. For example, 27080A with TC-ER rating becomes 28080A. ■ 18 AWG - 10 AWG. \* Available upon request.

Note: All products are Indoor/Outdoor rated and sunlight-resistant. 1000V and 2000V ICEA-rated cables are available with a minimum order of 5000 ft. 2000V UL1277 TC cables are available with a minimum order of 5000 ft.