

## 9777 Multi-Conductor - Audio, Control and Instrumentation Cable



### Description:

18 AWG stranded (19x30) TC conductors, polypropylene insulation, twisted pairs, individually shielded w/Beldfoil® (100% coverage), 20 AWG stranded TC drain wire, PVC jacket.

### Physical Characteristics (Overall)

#### Conductor

##### AWG:

# Pairs	AWG	Stranding	Conductor Material
15	18	19x30	TC - Tinned Copper

#### Insulation

##### Insulation Material:

Insulation Material
PP - Polypropylene

#### Inner Shield

##### Inner Shield Material:

Inner Shield Trade Name	Type	Inner Shield Material	Coverage (%)
Beldfoil® (Z-Fold®)	Tape	Aluminum Foil-Polyester Tape	100

##### Inner Shield Drain Wire AWG:

AWG
20

Inner Shield Drain Wire Stranding: Stranded

Inner Shield Drain Wire Conductor Material: TC - Tinned Copper

#### Outer Jacket

##### Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

#### Overall Cabling

Overall Nominal Diameter: 0.819 in.

#### Pair

##### Pair Color Code Chart:

Number	Color
1	Black & Red
2	Black & White
3	Black & Green
4	Black & Blue
5	Black & Yellow
6	Black & Brown
7	Black & Orange
8	Red & White
9	Red & Green
10	Red & Blue
11	Red & Yellow
12	Red & Brown
13	Red & Orange
14	Green & White

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15	Green & Blue
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**Pair Lay Length & Direction:**

<b>Lay Length (in.)</b>
1.750

### Mechanical Characteristics (Overall)

<b>Operating Temperature Range:</b>	-20°C To +80°C
<b>UL Temperature Rating:</b>	80°C (UL AWM Style 2919)
<b>Bulk Cable Weight:</b>	377.200 lbs/1000 ft.
<b>Max. Recommended Pulling Tension:</b>	884 lbs.
<b>Min. Bend Radius (Install)/Minor Axis:</b>	8.200 in.

### Applicable Specifications and Agency Compliance (Overall)

**Applicable Standards & Environmental Programs**

<b>NEC/(UL) Specification:</b>	CM
<b>CEC/C(UL) Specification:</b>	CM
<b>AWM Specification:</b>	UL Style 2919 (30 V 80°C)
<b>EU CE Mark:</b>	Yes
<b>EU Directive 2000/53/EC (ELV):</b>	Yes
<b>EU Directive 2002/95/EC (RoHS):</b>	Yes
<b>EU RoHS Compliance Date (mm/dd/yyyy):</b>	01/01/2004
<b>EU Directive 2002/96/EC (WEEE):</b>	Yes
<b>EU Directive 2003/11/EC (BFR):</b>	Yes
<b>CA Prop 65 (CJ for Wire &amp; Cable):</b>	Yes
<b>MII Order #39 (China RoHS):</b>	Yes

**Flame Test**

<b>UL Flame Test:</b>	UL1685 UL Loading
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**Plenum/Non-Plenum**

<b>Plenum (Y/N):</b>	No
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### Electrical Characteristics (Overall)

**Nom. Characteristic Impedance:**

<b>Impedance (Ohm)</b>
50

**Nom. Inductance:**

<b>Inductance (µH/ft)</b>
.18

**Nom. Capacitance Conductor to Conductor:**

<b>Capacitance (pF/ft)</b>
30

**Nom. Capacitance Cond. to Other Conductor & Shield:**

<b>Capacitance (pF/ft)</b>
55

**Nominal Velocity of Propagation:**

<b>VP (%)</b>
66

**Nom. Conductor DC Resistance:**

<b>DCR @ 20°C (Ohm/1000 ft)</b>
6.4

## 9777 Multi-Conductor - Audio, Control and Instrumentation Cable

Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C: 8.300 Ohm/1000 ft

### Max. Operating Voltage - UL:

Voltage
30 V RMS (UL AWM Style 2919)
300 V RMS (CM)

### Max. Recommended Current:

Current
2.7 Amps per conductor @ 25°C

### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9777 0601000	1,000 FT	433.000 LB	CHROME	C	15 FS PR #18 PP PVC
9777 060500	500 FT	200.000 LB	CHROME	C	15 FS PR #18 PP PVC

#### Notes:

C = CRATE REEL PUT-UP.

## Introduction

Belden® paired cable products are manufactured in a variety of gage sizes, dimensions, insulation materials, shielding configurations, and jacketing materials including Plenum and High-Temperature versions to meet the technical requirements of many different types of systems.

Paired cables allow balanced signal transmission, which results in lower crosstalk through common mode rejection. Due to the improved noise immunity of twisted pairs, they generally permit higher data speeds than multi-conductor cables.

As an aid to proper cable selection, both the suggested working voltages and the maximum temperature ratings are indicated for each applicable paired cable selection.

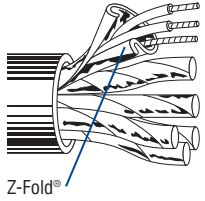
Most of our paired cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find a paired cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

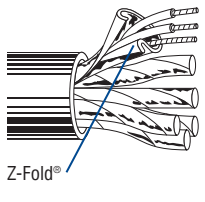
### Paired Cables Packaging

Belden's unique UnReel® cable dispenser is available for many of the paired cable products listed in this section. The letter "U" before the specified put-up length denotes UnReel packaging.

# Individually Shielded

## Audio, Control and Instrumentation Cables

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Color Code	Standard Lengths		Standard Unit Weight		Nom. DCR		Nominal OD		Nom. Imp. (Ω)	Nom. Vel. of Prop.	Nom. Capacitance			
					Ft.	m	Lbs.	kg	Cond.	Shield	Inch	mm			* pF/ Ft.	* pF/ m	** pF/ Ft.	** pF/ m
<b>20 AWG Stranded (7x28) TC Conductors • Twisted Pairs • Individually Shielded w/Beldfoil® (100% Coverage) • 22 AWG Stranded TC Drain Wire</b>																		
<b>Polypropylene Insulation • Overall Chrome PVC Jacket</b>																		
 <p>Z-Fold®</p>	9873	NEC:	3	See Chart 3	100	30.5	6.6	3.0	10.5Ω/M'	14.0Ω/M'	.341	8.66	50	66%	30	98	55	180
		CM			250	76.2	14.5	6.6	34.4Ω/km	45.9Ω/km								
		CEC:			(Tech Info	500	152.4	32.5	14.8									
		CM			Section)	1000	304.8	58.0	26.3									
	9874	NEC:	6	See Chart 3	100	30.5	10.3	4.7	10.5Ω/M'	11.3Ω/M'	.445	11.30	50	66%	30	98	55	180
		CM			250	76.2	29.0	13.2	34.4Ω/km	37.1Ω/km								
		CEC:			(Tech Info	500	152.4	56.5	25.7									
		CM			Section)	1000	304.8	113.0	51.3									
	9875	NEC:	9	See Chart 3	100	30.5	17.7	8.1	10.5Ω/M'	11.3Ω/M'	.555	14.10	50	66%	30	98	55	180
		CM			500	152.4	97.0	44.0	34.4Ω/km	37.1Ω/km								
CEC:		(Tech Info			1000	304.8	187.0	88.4										
CM		Section)																
9876	NEC:	11	See Chart 3	1000	304.8	220.0	100.0	10.5Ω/M'	11.3Ω/M'	.600	15.24	50	66%	30	98	55	180	
	CM			34.4Ω/km	37.1Ω/km													
	CEC:			(Tech Info														
	CM			Section)														
9877	NEC:	12	See Chart 3	100	30.5	22.1	10.1	10.5Ω/M'	11.3Ω/M'	.617	15.67	50	66%	30	98	55	180	
	CM			500	152.4	119.0	54.1	34.4Ω/km	37.1Ω/km									
	CEC:			(Tech Info	1000	304.8	237.0	107.7										
	CM			Section)														
9879	NEC:	15	See Chart 3	500	152.4	146.0	66.4	10.5Ω/M'	11.3Ω/M'	.689	17.50	50	66%	30	98	55	180	
	CM			1000	304.8	296.0	134.5	34.4Ω/km	37.1Ω/km									
	CEC:			(Tech Info														
	CM			Section)														

<b>18 AWG Stranded (19x30) TC Conductors • Twisted Pairs • Individually Shielded w/Beldfoil (100% Coverage) • 20 AWG Stranded TC Drain Wire</b>																		
<b>Polypropylene Insulation • Chrome PVC Jacket</b>																		
 <p>Z-Fold®</p>	9773	NEC:	3	See Chart 3	100	30.5	10.8	4.9	6.4Ω/M'	8.3Ω/M'	.404	10.26	50	66%	30	98	55	180
		CM			500	152.4	52.5	23.8	21.0Ω/km	27.2Ω/km								
		CEC:			(Tech Info	1000	304.8	107.0	48.6									
		CM			Section)													
	9774	NEC:	6	See Chart 3	100	30.5	16.1	7.3	6.4Ω/M'	8.3Ω/M'	.560	14.22	50	66%	30	98	55	180
		CM			500	152.4	89.5	40.9	21.0Ω/km	27.2Ω/km								
		CEC:			(Tech Info	1000	304.8	176.0	80.8									
		CM			Section)													
	9775	NEC:	9	See Chart 3	100	30.5	25.8	11.7	6.4Ω/M'	8.3Ω/M'	.655	16.64	50	66%	30	98	55	180
		CM			500	152.4	123.0	55.8	21.0Ω/km	27.2Ω/km								
CEC:		(Tech Info			1000	304.8	241.0	109.4										
CM		Section)																
9776	NEC:	12	See Chart 3	100	30.5	31.6	14.4	6.4Ω/M'	8.3Ω/M'	.735	18.67	50	66%	30	98	55	180	
	CM			500	152.4	151.5	69.0	21.0Ω/km	27.2Ω/km									
	CEC:			(Tech Info	1000	304.8	307.0	139.4										
	CM			Section)														
9777	NEC:	15	See Chart 3	100	30.5	38.8	17.6	6.4Ω/M'	8.3Ω/M'	.819	20.80	50	66%	30	98	55	180	
	CM			500	152.4	194.0	88.1	21.0Ω/km	27.2Ω/km									
	CEC:			(Tech Info	1000	304.8	421.0	191.1										
	CM			Section)														

DCR = DC Resistance • TC = Tinned Copper

\*Capacitance between conductors.

\*\*Capacitance between one conductor and other conductors connected to shield.