

8178 Multi-Conductor - Low Capacitance Computer Cable for EIA RS-232/422 & Digital



Description:

24 AWG stranded (7x32) TC conductors, Datalene® insulation, twisted pairs individually Beldfoil® shielded + overall 100% Beldfoil + TC braid shield (65% coverage), drain wire, PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
18	24	7x32	TC - Tinned Copper

Insulation

Insulation Material:

Insulation Trade Name	Insulation Material
Datalene®	FPE - Foam Polyethylene

Inner Shield

Inner Shield Material:

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

Inner Shield Drain Wire AWG:

AWG
24

Inner Shield Drain Wire Stranding: Stranded

Inner Shield Drain Wire Conductor Material: TC - Tinned Copper

Outer Shield

Outer Shield Material:

Layer #	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
1	Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100
2		Braid	TC - Tinned Copper	65

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Overall Cabling

Overall Nominal Diameter: 0.686 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

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9	Red & Green
10	Red & Blue
11	Red & Yellow
12	Red & Brown
13	Red & Orange
14	Green & White
15	Green & Blue
16	Green & Yellow
17	Green & Brown
18	Green & Orange

Pair Lay Length & Direction:

Lay Length (in.)	Twists/ft. (twist/ft)
1.500	8.000

Mechanical Characteristics (Overall)

Operating Temperature Range:	-40°C To +60°C
UL Temperature Rating:	60°C (UL AWM Style 2493)
Bulk Cable Weight:	263 lbs/1000 ft.
Max. Recommended Pulling Tension:	364 lbs.
Min. Bend Radius (Install)/Minor Axis:	7 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CM
CEC/C(UL) Specification:	CM
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2004
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes

Plenum/Non-Plenum

Plenum (Y/N):	No
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Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)
100

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)
12.5

Nom. Capacitance Cond. to Other Conductor & Shield:

Capacitance (pF/ft)
22

Nominal Velocity of Propagation:

VP (%)
78

Nom. Conductor DC Resistance:

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DCR @ 20°C (Ohm/1000 ft)

24

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

2.6

Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C: 18 Ohm/1000 ft

Max. Operating Voltage - UL:

Voltage

300 V RMS (UL AWM Style 2493)

Max. Recommended Current:

Current

1 Amp per conductor @ 25°C

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
8178 060100	100 FT	24.600 LB	CHROME	C	18 FS PR#24 FHDPE SH PVC
8178 0601000	1,000 FT	238.000 LB	CHROME	C	18 FS PR#24 FHDPE SH 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.

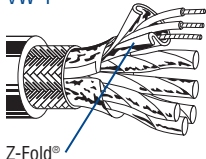
Most of our paired cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find a paired cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

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 Pairs with Overall Foil/Braid Shield

Low-Capacitance Computer Cables for EIA RS-232, EIA RS-422, and Digital Audio Applications

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
24 AWG Stranded (7x32) TC Conductors • Twisted Pairs Individually Beldfoil® Shielded + Overall Beldfoil (100% Coverage) + TC Braid Shield (65%) • Drain Wire [▲]																		
Datalene® Insulation • Chrome PVC Jacket																		
UL AWM Style 2493 (60°C) VW-1 	8168	NEC:	8	See	100	30.5	10.8	4.9	24.0Ω/M'	Individual:	.479 12.17	100	78%	12.5	41	22	72.2	
		CM		Chart 3	500	152.4	61.5	28.0	78.7Ω/km	18.0Ω/M'								
		CEC:		(Tech Info	1000	304.8	115.0	52.3	59.1Ω/km	Overall:								
		CM		Section)					3.0Ω/M'	9.8Ω/km								
	8170	NEC:	10	See	100	30.5	18.0	8.2	24.0Ω/M'	Individual:	.584 14.83	100	78%	12.5	41	22	72.2	
CM		Chart 3		500	152.4	83.0	37.7	78.7Ω/km	18.0Ω/M'									
CEC:		(Tech Info		1000	304.8	164.0	74.5	59.1Ω/km	Overall:									
CM		Section)						2.7Ω/M'	8.9Ω/km									
	8175	NEC:	15	See	100	30.5	22.6	10.3	24.0Ω/M'	Individual:	.665 16.89	100	78%	12.5	41	22	72.2	
CM		Chart 3		500	152.4	107.5	48.9	78.7Ω/km	18.0Ω/M'									
CEC:		(Tech Info		1000	304.8	210.0	95.5	59.1Ω/km	Overall:									
CM		Section)						2.5Ω/M'	8.2Ω/km									
	8178	NEC:	18	See	100	30.5	24.6	11.2	24.0Ω/M'	Individual:	.686 17.42	100	78%	12.5	41	22	72.2	
CM		Chart 3		500	152.4	117.0	53.2	78.7Ω/km	18.0Ω/M'									
CEC:		(Tech Info		1000	304.8	238.0	108.2	59.1Ω/km	Overall:									
CM		Section)						2.6Ω/M'	8.5Ω/km									
	8185	NEC:	25	See	100	30.5	32.3	14.7	24.0Ω/M'	Individual:	.822 20.88	100	78%	12.5	41	22	72.2	
CM		Chart 3		500	152.4	160.5	73.0	78.7Ω/km	18.0Ω/M'									
CEC:		(Tech Info		1000	304.8	356.0	161.8	59.1Ω/km	Overall:									
CM		Section)						2.4Ω/M'	7.9Ω/km									

[▲]24 AWG stranded TC drain wire

DCR = DC Resistance • TC = Tinned Copper

*Capacitance between conductors.

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