

## 8165 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
5	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® (Z-Fold®)	Tape	Aluminum Foil-Polyester Tape	100

##### Inner Shield Drain Wire AWG:

AWG
24

Inner Shield Drain Wire Stranding: 7x32

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: 0.413 in.

#### Pair

##### Pair Color Code Chart:

Number	Color
1	Black & Red
2	Black & White
3	Black & Green
4	Black & Blue
5	Black & Yellow

##### Pair Lay Length & Direction:

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

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### Mechanical Characteristics (Overall)

Operating Temperature Range:	-40°C To +60°C
Non-UL Temperature Rating:	60°C (UL AWM Style 2493)
Bulk Cable Weight:	100 lbs/1000 ft.
Max. Recommended Pulling Tension:	127 lbs.
Min. Bend Radius (Install)/Minor Axis:	4.250 in.

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CM
CEC/C(UL) Specification:	CM
AWM Specification:	UL Style 2493 (300 V 60°C)
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:

DCR @ 20°C (Ohm/1000 ft)
24.0

#### Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
3.4

Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C:	18 Ohm/1000 ft
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#### Max. Operating Voltage - UL:

Voltage
300 V RMS

## 8165 Multi-Conductor - Low Capacitance Computer Cable for EIA RS-232/422 & Digital

**Max. Recommended Current:**

Current
1.6 Amps per conductor @ 25°C

### Notes (Overall)

**Notes:** Datalene® insulation features include low dielectric constant and a dissipation factor for high-speed, low-distortion data handling. Physical properties include good crush resistance and light weight.

### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
8165 060100	100 FT	9.100 LB	CHROME		5 FS PR #24 FHDPE SH PVC
8165 0601000	1,000 FT	90.000 LB	CHROME	C	5 FS PR #24 FHDPE SH PVC
8165 060500	500 FT	45.500 LB	CHROME	C	5 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.

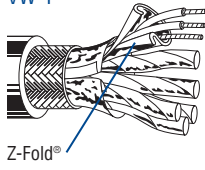
Most of our paired cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find a paired cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

### 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
<b>24 AWG Stranded (7x32) TC Conductors • Twisted Pairs Individually Beldfoil® Shielded + Overall Beldfoil (100% Coverage) + TC Braid Shield (65%) • Drain Wire<sup>▲</sup></b>																		
<b>Datalene® Insulation • Chrome PVC Jacket</b>																		
UL AWM Style 2493 (60°C) VW-1   Z-Fold®	<b>8162</b>	NEC:	2	See Chart 3	100	30.5	6.2	2.8	24.0Ω/M'	Individual:	.343	8.71	100	78%	12.5	41	22	72.2
		CM			500	152.4	30.0	13.6	78.7Ω/km	18.0Ω/M'								
	CEC:	(Tech Info Section)	1000	304.8	57.0	25.9	59.1Ω/km	Overall:	4.3Ω/M'	14.1Ω/km								
	CM																	
	<b>8163</b>	NEC:	3	See Chart 3	100	30.5	7.0	3.2	24.0Ω/M'	Individual:	.359	9.12	100	78%	12.5	41	22	72.2
		CM			500	152.4	34.0	15.5	78.7Ω/km	18.0Ω/M'								
	CEC:	(Tech Info Section)	1000	304.8	66.0	30.0	59.1Ω/km	Overall:	4.4Ω/M'	14.4Ω/km								
CM																		
<b>8164</b>	NEC:	4	See Chart 3	100	30.5	8.2	3.7	24.0Ω/M'	Individual:	.388	9.86	100	78%	12.5	41	22	72.2	
	CM			500	152.4	39.5	18.0	78.7Ω/km	18.0Ω/M'									
CEC:	(Tech Info Section)	1000	304.8	79.0	35.9	59.1Ω/km	Overall:	3.2Ω/M'	10.5Ω/km									
CM																		
<b>8165</b>	NEC:	5	See Chart 3	100	30.5	9.0	4.1	24.0Ω/M'	Individual:	.413	10.49	100	78%	12.5	41	22	72.2	
	CM			500	152.4	45.0	20.5	78.7Ω/km	18.0Ω/M'									
CEC:	(Tech Info Section)	1000	304.8	89.0	40.5	59.1Ω/km	Overall:	3.4Ω/M'	11.2Ω/km									
CM																		
<b>8166</b>	NEC:	6	See Chart 3	100	30.5	9.0	4.1	24.0Ω/M'	Individual:	.446	11.33	100	78%	12.5	41	22	72.2	
	CM			500	152.4	50.0	22.7	78.7Ω/km	18.0Ω/M'									
CEC:	(Tech Info Section)	1000	304.8	99.0	45.0	59.1Ω/km	Overall:	2.8Ω/M'	9.2Ω/km									
CM																		
<b>8167</b>	NEC:	7	See Chart 3	500	152.4	52.5	23.9	24.0Ω/M'	Individual:	.446	11.33	100	78%	12.5	41	22	72.2	
	CM			1000	304.8	103.0	46.7	78.7Ω/km	18.0Ω/M'									
CEC:	(Tech Info Section)	59.1Ω/km	Overall:	2.8Ω/M'	9.2Ω/km													
CM																		

<sup>▲</sup>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.

Datalene insulation features include low dielectric constant and a dissipation factor for high-speed, low-distortion data handling. Physical properties include good crush resistance and light weight.