

## 8102 Multi-Conductor - Low Capacitance Computer Cable for EIA RS-232/422



### Description:

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

### Physical Characteristics (Overall)

#### Conductor

##### AWG:

# Pairs	AWG	Stranding	Conductor Material
2	24	7x32	TC - Tinned Copper

#### Insulation

##### Insulation Material:

Insulation Trade Name	Insulation Material
Datalene®	FPE - Foam Polyethylene

#### Outer Shield

##### Outer Shield Material:

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

##### Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
24	7x32	TC - Tinned Copper

#### Outer Jacket

##### Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

#### Overall Cabling

Overall Nominal Diameter: 0.270 in.

#### Pair

##### Pair Color Code Chart:

Number	Color
1	White/Blue & Blue/White
2	White/Orange & Orange/White

### Mechanical Characteristics (Overall)

Operating Temperature Range:	-30°C To +80°C
UL Temperature Rating:	80°C (UL AWM Style 2919)
Bulk Cable Weight:	37 lbs/1000 ft.
Max. Recommended Pulling Tension:	27.500 lbs.
Min. Bend Radius (Install)/Minor Axis:	2.750 in.

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

NEC/(UL) Specification: CM

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<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
<b>Plenum Number:</b>	88102

## Electrical Characteristics (Overall)

### Nom. Characteristic Impedance:

<b>Impedance (Ohm)</b>
100

### Nom. Inductance:

<b>Inductance (µH/ft)</b>
.201

### Nom. Capacitance Conductor to Conductor:

<b>Capacitance (pF/ft)</b>
12.5

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

<b>Capacitance (pF/ft)</b>
22

### Nominal Velocity of Propagation:

<b>VP (%)</b>
78

### Nom. Conductor DC Resistance:

<b>DCR @ 20°C (Ohm/1000 ft)</b>
24

### Nominal Outer Shield DC Resistance:

<b>DCR @ 20°C (Ohm/1000 ft)</b>
4.6

### Max. Operating Voltage - UL:

<b>Voltage</b>
30 V RMS (UL AWM Style 2919)
300 V RMS

### Max. Recommended Current:

<b>Current</b>
1.8 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.

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### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
8102 060100	100 FT	4.100 LB	CHROME		2 PR #24 FHDPE SH PVC
8102 0601000	1,000 FT	38.000 LB	CHROME	C	2 PR #24 FHDPE SH PVC
8102 06010000	10,000 FT	380.000 LB	CHROME	C Y	2 PR #24 FHDPE SH PVC
8102 060500	500 FT	17.000 LB	CHROME	C	2 PR #24 FHDPE SH PVC

**Notes:**

C = CRATE REEL PUT-UP.

Y = FINAL PUT-UP LENGTH MAY VARY -10% TO +20% FROM LENGTH SHOWN.MAY CONTAIN 2 PIECES. MINIMUM LENGTH OF ANY ONE PIECE IS 1500'.

## 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.

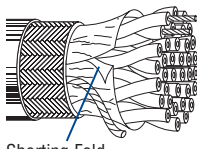
Most of our paired cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find a paired cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

### 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.

# Overall Foil/Braid Shield

Low-Capacitance Computer Cables for EIA RS-232 and EIA RS-422 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 • Overall Beldfoil® (100% Coverage) + TC Braid Shield (65% Coverage) • Drain Wire†</b>																		
<b>Datalene® Insulation • Chrome PVC Jacket</b>																		
 <p>UL AWM Style 2919 (30V 80°C)</p> <p>Shorting Fold</p>	<b>8102</b>	NEC: CM CEC: CM	2	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	4.1 17.0 38.0 380.0	1.9 7.7 17.3 172.7	24.0Ω/M' 78.7Ω/km	4.6Ω/M' 15.1Ω/km	.270 6.86	100	78%	12.5	41	22	72.2	
	<b>8103</b>	NEC: CM CEC: CM	3	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	4.6 19.5 42.0 430.0	2.1 8.9 19.1 195.5	24.0Ω/M' 78.7Ω/km	3.8Ω/M' 12.5Ω/km	.283 7.19	100	78%	12.5	41	22	72.2	
	<b>8104</b>	NEC: CM CEC: CM	4	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	5.1 21.0 46.0 490.0	2.3 9.5 20.9 222.7	24.0Ω/M' 78.7Ω/km	4.1Ω/M' 13.5Ω/km	.302 7.67	100	78%	12.5	41	22	72.2	
	<b>8105</b>	NEC: CM CEC: CM	5	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	5.8 28.0 53.0 53.0	2.6 12.7 24.1 24.1	24.0Ω/M' 78.7Ω/km	4.2Ω/M' 13.8Ω/km	.316 8.03	100	78%	12.5	41	22	72.2	
	<b>8106</b>	NEC: CM CEC: CM	6	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	6.3 30.5 58.0 58.0	2.9 13.9 26.4 26.4	24.0Ω/M' 78.7Ω/km	3.5Ω/M' 11.5Ω/km	.341 8.66	100	78%	12.5	41	22	72.2	
	<b>8107</b>	NEC: CM CEC: CM	7	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	6.8 33.0 63.0 63.0	3.1 15.0 28.6 28.6	24.0Ω/M' 78.7Ω/km	3.5Ω/M' 11.5Ω/km	.341 8.66	100	78%	12.5	41	22	72.2	
	<b>8108</b>	NEC: CM CEC: CM	8	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	7.6 37.5 72.0 72.0	3.5 17.1 32.8 32.8	24.0Ω/M' 78.7Ω/km	2.7Ω/M' 8.9Ω/km	.370 9.40	100	78%	12.5	41	22	72.2	
	<b>8110</b>	NEC: CM CEC: CM	10	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	8.1 45.5 90.0 90.0	3.7 20.7 40.9 40.9	24.0Ω/M' 78.7Ω/km	2.4Ω/M' 7.9Ω/km	.427 10.85	100	78%	12.5	41	22	72.2	
	<b>8112</b>	NEC: CM CEC: CM	12.5 (12 pairs + 1 single)	See Chart 5 (Tech Info Section)	100 500 1000 10000	30.5 152.4 304.8 3048.0	9.2 51.0 101.0 101.0	4.2 23.3 45.9 45.9	24.0Ω/M' 78.7Ω/km	2.4Ω/M' 7.9Ω/km	.440 11.18	100	78%	12.5	41	22	72.2	
	<b>8115</b>	NEC: CM CEC: CM	15	See Chart 5 (Tech Info Section)	500 1000	152.4 304.8	63.5 116.0	28.9 52.7	24.0Ω/M' 78.7Ω/km	2.6Ω/M' 8.5Ω/km	.495 12.57	100	78%	12.5	41	22	72.2	
<b>8118</b>	NEC: CM CEC: CM	18	See Chart 5 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	13.3 70.5 144.0	6.0 32.0 65.5	24.0Ω/M' 78.7Ω/km	2.1Ω/M' 6.9Ω/km	.537 13.64	100	78%	12.5	41	22	72.2		
<b>8125</b>	NEC: CM CEC: CM	25	See Chart 5 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	20.7 98.0 191.0	9.4 44.5 86.8	24.0Ω/M' 78.7Ω/km	2.0Ω/M' 6.6Ω/km	.632 16.05	100	78%	12.5	41	22	72.2		

†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.