

## 9949 Multi-Conductor - Computer Cable for EIA RS-232 Applications



### Description:

22 AWG stranded (7x30) TC conductors, S-R PVC insulation, overall Beldfoil® (100% coverage) + TC braid shield (65% coverage), PVC jacket.

### Physical Characteristics (Overall)

#### Conductor

##### AWG:

# Conductors	AWG	Stranding	Conductor Material
37	22	7x30	TC - Tinned Copper

#### Insulation

##### Insulation Material:

Insulation Material
S-R PVC - Semi-Rigid Polyvinyl Chloride

#### 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 Cabling Color Code Chart:

Number	Color
1	Black
2	White
3	Red
4	Green
5	Orange
6	Blue
7	White/Black
8	Red/Black
9	Green/Black
10	Orange/Black
11	Blue/Black
12	Black/White
13	Red/White
14	Green/White
15	Blue/White
16	Black/Red
17	White/Red
18	Orange/Red
19	Blue/Red
20	Red/Green
21	Orange/Green
22	Black/White/Red

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23	White/Black/Red
24	Red/Black/White
25	Green/Black/White
26	Orange/Black/White
27	Blue/Black/White
28	Black/Red/Green
29	White/Red/Green
30	Red/Black/Green
31	Green/Black/Orange
32	Orange/Black/Green
33	Blue/White/Orange
34	Black/White/Orange
35	White/Red/Orange
36	Orange/White/Blue
37	White/Red/Blue

**Overall Nominal Diameter:** 0.460 in.

### Mechanical Characteristics (Overall)

<b>Operating Temperature Range:</b>	-30°C To +80°C
<b>UL Temperature Rating:</b>	80°C (UL AWM Style 2464)
<b>Bulk Cable Weight:</b>	160 lbs/1000 ft.
<b>Min. Bend Radius (Install)/Minor Axis:</b>	4.600 in.

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

<b>NEC/(UL) Specification:</b>	CMG
<b>CEC/C(UL) Specification:</b>	CMG
<b>AWM Specification:</b>	UL Style 2464 (300 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>	10/01/2005
<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 FT4 Loading
<b>C(UL) Flame Test:</b>	FT4

#### Plenum/Non-Plenum

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

#### Nom. Capacitance Conductor to Conductor:

<b>Capacitance (pF/ft)</b>
35

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

<b>Capacitance (pF/ft)</b>
63

#### Nom. Conductor DC Resistance:

## 9949 Multi-Conductor - Computer Cable for EIA RS-232 Applications

**DCR @ 20°C (Ohm/1000 ft)**

14.7

**Nominal Outer Shield DC Resistance:**

**DCR @ 20°C (Ohm/1000 ft)**

2.7

**Max. Operating Voltage - UL:**

**Voltage**

300 V RMS (UL AWM Style 2464)

**Max. Recommended Current:**

**Current**

1.4 Amps per conductor @ 25°C

### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9949 060100	100 FT	16.100 LB	CHROME	C	37 #22 PVC SHLD PVC
9949 0601000	1,000 FT	180.000 LB	CHROME	C	37 #22 PVC SHLD PVC
9949 060500	500 FT	87.500 LB	CHROME	C	37 #22 PVC SHLD PVC

**Notes:**

C = CRATE REEL PUT-UP.

## Introduction

Belden® multi-conductor cables are manufactured in a wide variety of gage sizes, dimensions, insulation materials, shielding configurations, and jacketing materials including Plenum and High-Temperature versions. These cables meet the technical requirements of many different types of systems. In fact, Belden offers one of the broadest lines of UL Listed, NEC and CEC multi-conductor cables available from any single source.

Applications for multi-conductor cables include computers, communications, instrumentation, sound, control, audio, and data transmission. Each of these cables is designed to protect signal integrity under critical conditions by reducing hum, noise, and crosstalk.

To assist you in selecting the proper cable for your application, both the suggested working voltages and the maximum temperature ratings are indicated for each applicable product in this section.

Most of our multi-conductor 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 multi-conductor cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

### Multi-Conductor Cables Packaging

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

## Selection Guide

### Shielded Multi-Conductor Computer Cables for RS-232 Applications

Specifications		Cable Series*			
		9925	9608	9533	9939
<b>Conductor Size:</b> (AWG)	28				
	24	✓	✓	✓	
	22				✓
	20				
	18				
Page No.		4.18	4.17	4.11	4.19
<b>Insulation:</b>	S-R PVC		✓	✓	✓
	Polyethylene				
	Polypropylene				
	Datalene®†	✓			
<b>Shield:</b>	Overall Foil			✓	
	Drain Wire	✓		✓	
	Overall Foil/Braid	✓	✓		✓
	Braid Coverage	65%	65%		65%
<b>Drain Wire Overall:</b>		Yes	No	Yes	No
<b>No. of Cond. Available:</b>	1				
	2				
	3	✓	✓	✓	✓
	4	✓	✓	✓	✓
	5	✓	✓	✓	✓
	6	✓	✓	✓	✓
	7	✓	✓	✓	✓
	8	✓	✓	✓	✓
	9	✓	✓	✓	✓
	10	✓	✓	✓	✓
	11				
	12				
	13				
	15	✓	✓	✓	✓
	17				
	18				
	19				
	20			✓	
	25	✓	✓	✓	✓
	27				
30			✓		
31					
37	✓	✓		✓	
40			✓		
50		✓	✓	✓	
<b>Capacitance ** (pF/ft.)</b>		12.0	30.0	30.0	35.0

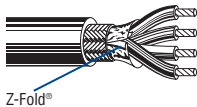
\*All cables are UL-listed.

\*\*Capacitance may vary on some cables.

† Foam high density polyethylene.

# Overall Foil/Braid Shield

## Computer Cables for EIA RS-232 Applications

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Cond.	Color Code	Standard Lengths		Standard Unit Weight		Nominal OD		Nominal DCR		Nominal Capacitance			
					Ft.	m	Lbs.	kg	Inch	mm	Cond.	Shield	* pF/ Ft.	* pF/ m	** pF/ Ft.	** pF/ m
<b>22 AWG Stranded (7x30) Tinned Copper Conductors • Overall Beldfoil® (100% Coverage) + Tinned Copper Braid Shield (65% Coverage)</b>																
<b>Semi-rigid PVC Insulation • Chrome PVC Jacket</b>																
 <p>Z-Fold®</p>	9939	NEC: CMG CEC: CMG FT4	3	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	3.6 14.0 27.0	1.6 6.4 12.3	.202	5.13	14.7Ω/M' 48.2Ω/km	6.2Ω/M' 20.3Ω/km	37	121	67	220
	9940	NEC: CMG CEC: CMG FT4	4	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	4.0 16.5 32.0	1.8 7.5 14.5	.215	5.46	14.7Ω/M' 48.2Ω/km	5.0Ω/M' 16.4Ω/km	37	121	67	220
	9941	NEC: CMG CEC: CMG FT4	5	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	4.2 19.0 38.0	1.8 8.6 17.3	.230	5.84	14.7Ω/M' 48.2Ω/km	7.1Ω/M' 23.3Ω/km	37	121	67	220
	9942	NEC: CMG CEC: CMG FT4	6	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	4.7 22.0 43.0	2.1 10.0 19.5	.245	6.22	14.7Ω/M' 48.2Ω/km	7.9Ω/M' 25.9Ω/km	35	115	63	207
	9943	NEC: CMG CEC: CMG FT4	7	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	5.0 23.5 46.0	2.3 10.8 20.9	.245	6.22	14.7Ω/M' 48.2Ω/km	7.0Ω/M' 23.0Ω/km	35	115	63	207
	9944	NEC: CMG CEC: CMG FT4	8	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	5.5 26.0 52.0	2.5 11.8 23.6	.260	6.60	14.7Ω/M' 48.2Ω/km	6.0Ω/M' 19.7Ω/km	35	115	63	207
	9945	NEC: CMG CEC: CMG FT4	9	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	6.1 28.5 57.0	2.8 12.9 25.9	.280	7.11	14.7Ω/M' 48.2Ω/km	5.1Ω/M' 16.7Ω/km	35	115	63	207
	9946	NEC: CMG CEC: CMG FT4	10	See Chart 1 (Tech Info Section)	100 500 1000	30.5 152.4 304.8	6.6 31.5 62.0	3.0 14.3 28.1	.300	7.62	14.7Ω/M' 48.2Ω/km	4.6Ω/M' 15.1Ω/km	35	115	63	207
	9947	NEC: CMG CEC: CMG FT4	15	See Chart 2R (Tech Info Section)	100 500 1000	30.5 152.4 304.8	8.7 42.5 83.0	4.0 19.3 37.7	.340	8.64	14.7Ω/M' 48.2Ω/km	4.1Ω/M' 13.5Ω/km	35	115	63	207
	9948	NEC: CMG CEC: CMG FT4	25	See Chart 2R (Tech Info Section)	100 500 1000	30.5 152.4 304.8	13.3 66.5 132.0	6.0 30.2 59.9	.410	10.41	14.7Ω/M' 48.2Ω/km	3.1Ω/M' 10.2Ω/km	35	115	63	207
9949	NEC: CMG CEC: CMG FT4	37	See Chart 2R (Tech Info Section)	100 500 1000	30.5 152.4 304.8	16.1 87.5 180.0	7.3 39.7 81.7	.460	11.68	14.7Ω/M' 48.2Ω/km	2.7Ω/M' 8.9Ω/km	35	115	63	207	
9950	NEC: CMG CEC: CMG FT4	50	See Chart 2R (Tech Info Section)	100 500 1000	30.5 152.4 304.8	25.2 118.0 238.0	11.4 53.6 108.1	.555	14.10	14.7Ω/M' 48.2Ω/km	2.3Ω/M' 7.5Ω/km	35	115	63	207	

DCR = DC Resistance

\*Capacitance between conductors.

\*\*Nominal capacitance conductor to conductor and shield.