

9431 Multi-Conductor - Audio, Control and Instrumentation Cable



Description:

22 AWG stranded (7x30) tinned copper conductors, conductors cabled, PVC insulation, PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Conductors	AWG	Stranding	Conductor Material
20	22	7x30	TC - Tinned Copper

Insulation

Insulation Material:

Insulation Material	Wall Thickness (in.)
PVC - Polyvinyl Chloride	.010

Outer Shield

Outer Shield Material:

Outer Shield Material
Unshielded

Outer Jacket

Outer Jacket Material:

Outer Jacket Material	Nom. Wall Thickness (in.)
PVC - Polyvinyl Chloride	.040

Overall Cabling

Overall Cabling Lay Length & Direction:

Length (in.)
4.05

Overall Cabling Color Code Chart:

Color
Black
White
Red
Green
Orange
Blue
White/Black
Red/Black
Green/Black
Orange/Black
Blue/Black
Black/White
Red/White
Green/White
Blue/White
Black/Red
White/Red
Orange/Red
Blue/Red
Red/Green

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Overall Nominal Diameter: 0.345 in.

Mechanical Characteristics (Overall)

Operating Temperature Range: -20°C To +80°C

UL Temperature Rating: 80°C (UL AWM Style 2576)

Bulk Cable Weight: 83.500 lbs/1000 ft.

Max. Recommended Pulling Tension: 180 lbs.

Min. Bend Radius (Install)/Minor Axis: 3.500 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification: CMG

CEC/C(UL) Specification: CMG

AWM Specification: UL Style 2576 (150 V 80°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): 04/01/2005

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

Flame Test

UL Flame Test: FT4

Plenum/Non-Plenum

Plenum (Y/N): No

Electrical Characteristics (Overall)

Nom. Inductance:

Inductance (µH/ft)

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

Max. Operating Voltage - UL:

Voltage

Max. Recommended Current:

Current

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9431 060100	100 FT	9.100 LB	CHROME		20 #22 PVC PVC
9431 0601000	1,000 FT	87.000 LB	CHROME	C	20 #22 PVC PVC

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9431 060500	500 FT	44.500 LB	CHROME	C	20 #22 PVC PVC
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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
Conductor Size: (AWG)	28				
	24	✓	✓	✓	
	22				✓
	20				
	18				
Page No.		4.18	4.17	4.11	4.19
Insulation:	S-R PVC		✓	✓	✓
	Polyethylene				
	Polypropylene				
	Datalene®†	✓			
Shield:	Overall Foil			✓	
	Drain Wire	✓		✓	
	Overall Foil/Braid	✓	✓		✓
	Braid Coverage	65%	65%		65%
Drain Wire Overall:		Yes	No	Yes	No
No. of Cond. Available:	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		✓	✓	✓	
Capacitance ** (pF/ft.)		12.0	30.0	30.0	35.0

*All cables are UL-listed.

**Capacitance may vary on some cables.


† Foam high density polyethylene.



Unshielded

Audio, Control and Instrumentation Cables Plenum-Rated and Non-Plenum



Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Cond.	Color Code	Standard Lengths		Standard Unit Weight		Insulation Thickness		Jacket Thickness		Nominal OD	
					Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	Inch	mm

22 AWG Stranded (7x30) Tinned Copper Conductors • Conductors Cabled *(continued)*

PVC Insulation • Chrome PVC Jacket														
UL AWM Style 2576 (150V 80°C) 	8457	NEC:	12	See Chart 1 (Tech Info Section)	100	30.5	5.6	2.5	.010	.25	.032	.81	.272	6.91
		CMG:			U-500	U-152.4	25.5	11.6						
		CEC:			500	152.4	26.0	11.8						
		CMG FT4			U-1000	U-304.8	50.0	22.7						
					1000	304.8	52.0	23.6						
	8458	NEC:	15	See Chart 2R (Tech Info Section)	100	30.5	7.3	3.3	.010	.25	.040	1.02	.315	8.00
		CMG:			500	152.4	35.5	16.1						
		CEC:			1000	304.8	72.0	32.7						
		CMG FT4												
	9431	NEC:	20	See Chart 2R (Tech Info Section)	100	30.5	9.1	4.1	.010	.25	.040	1.02	.345	8.76
		CMG:			500	152.4	48.5	22.0						
		CEC:			1000	304.8	87.0	39.5						
		CMG FT4												
	8459	NEC:	25	See Chart 2R (Tech Info Section)	100	30.5	11.1	5.0	.010	.25	.040	1.02	.387	9.83
		CMG:			500	152.4	55.0	25.0						
		CEC:			1000	304.8	109.0	49.5						
		CMG FT4												
	9432	NEC:	30	See Chart 2R (Tech Info Section)	100	30.5	12.5	5.7	.010	.25	.040	1.02	.400	10.16
		CMG:			500	152.4	62.5	28.4						
		CEC:			1000	304.8	124.0	56.3						
		CMG FT4												
	9433	NEC:	40	See Chart 2R (Tech Info Section)	100	30.5	16.6	7.5	.010	.25	.040	1.02	.455	11.56
		CMG:			500	152.4	83.0	37.7						
		CEC:			1000	304.8	161.0	73.1						
		CMG FT4												
	9434	NEC:	50	See Chart 2R (Tech Info Section)	500	152.4	100.5	45.7	.010	.25	.045	1.14	.500	12.70
		CMG:			1000	304.8	206.0	93.5						
		CEC:												
		CMG FT4												

Plenum • FEP Insulation • Red FEP Jacket														
300V RMS, Non-conduit 	88442*	NEC:	2	Black, Red	100	30.5	2.3	1.0	.006	.15	.012	.30	.102	2.59
		CMP:			500 [†]	152.4	5.5	2.5						
		CEC:			1000 [†]	304.8	8.0	3.7						
		CMP FT6												
300V RMS, Non-conduit 	88444	NEC:	4	Black, White, Red, Green	100	30.5	2.9	1.3	.006	.15	.010	.25	.121	3.07
		CMP:			500 [†]	152.4	9.0	4.1						
		CEC:			1000 [†]	304.8	15.0	6.8						
		CMP FT6												

Suitable for Outdoor and Direct Burial applications.

Plenum • FEP Insulation • Natural Flamarrest® Jacket														
300V RMS, Non-conduit 	82442*	NEC:	2	Black, Red	U-1000 [†]	U-304.8	9.0	4.1	.006	.15	.015	.38	.113	2.87
		CMP:			1000 [†]	304.8	8.0	3.7						
		CEC:												
		CMP FT6												
300V RMS, Non-conduit 	82444	NEC:	4	Black, White, Red, Green	U-500 [†]	U-152.4	9.0	4.1	.006	.15	.015	.38	.134	3.40
		CMP:			U-1000 [†]	U-304.8	16.0	7.3						
		CEC:			1000 [†]	304.8	15.0	6.8						
		CMP FT6												

* Twisted Pair

[†] Spools and/or UnReel® cartons are one piece, but length may vary ±10% for spools and ±5% for UnReel from length shown.