

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.
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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
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Plenum/Non-Plenum

Plenum (Y/N):	No
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Electrical Characteristics (Overall)**Nom. Inductance:**

Inductance (μH/ft)
.17

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)
34

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
15.6

Max. Operating Voltage - UL:

Voltage
300 V RMS (CMG)
150 V RMS (UL AWM Style 2576)

Max. Recommended Current:

Current
1.5 Amps per conductor @ 25°C

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

Plenum • FEP Insulation • Red FEP Jacket

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

Suitable for Outdoor and Direct Burial applications.

Plenum • FEP Insulation • Natural Flamarrest® Jacket

300V RMS, Non-conduit 	82442*	NEC:	2	Black,	U-1000 [†]	U-304.8	9.0	4.1	.006	.15	.015	.38	.113	2.87
		CMP		Red	1000 [†]	304.8	8.0	3.7						
		CEC:												
		CMP FT6												

300V RMS, Non-conduit 	82444	NEC:	4	Black,	U-500 [†]	U-152.4	9.0	4.1	.006	.15	.015	.38	.134	3.40
		CMP		White,	U-1000 [†]	U-304.8	16.0	7.3						
		CEC:		Red,	1000 [†]	304.8	15.0	6.8						
		CMP FT6		Green										

* Twisted Pair

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