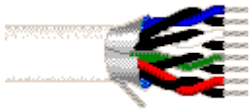
Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

85168 Multi-Conductor - High-Temperature Control and Instrumentation Cable



Description:

20 AWG stranded (7x28) TC conductors, Tefzel® insulation, pairs cabled together, overall 100% overall Beldfoil aluminim-Kapton® shield (100% coverage), drain wire, Tefzel® insulation, clear Tefzel material jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
8	20	7x28	TC - Tinned Copper

Insulation

Insulation Material:

Insulation Trade Name	Insulation Material	Wall Thickness (in.)
Tefzel®	ETFE - Ethylene Tetrafluoroethylene	.015

Outer Shield

Outer Shield Material:

Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
Beldfoil®	Tape	Aluminum-Kapton® Foil	100

Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
22	7x30	TC - Tinned Copper

Outer Jacket

Outer Jacket Material:

Outer Jacket Trade Name	Outer Jacket Material	Nom. Wall Thickness (in.)
Tefzel®	ETFE - Ethylene Tetrafluoroethylene	.025

Overall Cabling

Overall Nominal Diameter:	0.439 in.

Pair

Pair Color Code Chart:

Number	Color
1	Black & Red
2	Black & White
3	Black & Green
4	Black & Blue
5	Black & Yellow
6	Black & Brown
7	Black & Orange
8	Red & White

Mechanical Characteristics (Overall)

Operating Temperature Range:	-60°C To +150°C
UL Temperature Rating:	150°C
Bulk Cable Weight:	115.400 lbs/1000 ft.
Max. Recommended Pulling Tension:	224 lbs.

Min. Bend Radius (Install)/Minor Axis:	4.400 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

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:	UL1685 UL Loading, VW-1

Plenum/Non-Plenum

Plenum (Y/N):	No

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)
73

Nom. Inductance:

Inductance (µH/ft)
.186

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)
23

Nom. Capacitance Cond. to Other Conductor & Shield:

Capacitance (pF/ft)
40

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
9.3

Max. Operating Voltage - UL:

Voltage
300 V RMS

Max. Recommended Current:

Current
4 Amps per conductor @ 25°C

Notes (Overall)

Notes: Tefzel and Kapton are DuPont trademarks.

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
85168 3681000	1,000 FT	126.000 LB	CLEAR, TRANSPARENT	C	8 PR#20 TEFZEL FS TEFZEL
85168 368500	500 FT	62.000 LB	CLEAR, TRANSPARENT	C	8 PR#20 TEFZEL FS TEFZEL

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.

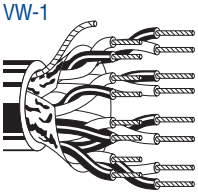
Paired Cables Packaging

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.

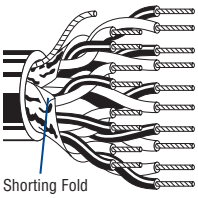
Overall Beldfoil® Shield

High-Temperature Control and Instrumentation Cables and Computer Cables for EIA RS-232 Applications

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Color Code	Standard Lengths		Standard Unit Weight		Insulation Thickness		Jacket Thickness		Nominal OD		Nominal Capacitance			
					Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	Inch	mm	* pF/ Ft.	* pF/ m	** pF/ Ft.	** pF/ m
20 AWG Stranded (7x28) TC Conductors • Pairs Cabled Together • Overall Beldfoil® Shield (100% Coverage) • Drain Wire																		
Tefzel® Insulation • Clear Tefzel Jacket																		
High-Temperature 300V RMS, 150°C VW-1	**85164**		4	See Chart 3 (Tech Info Section)	100 500† 1000†	30.5 152.4 304.8	6.6 37.0 71.0	3.0 16.8 32.3	.015	.38	.025	.64	.344	8.74	23	75	40	131
	85168		8	See Chart 3 (Tech Info Section)	100 500† 1000†	30.5 152.4 304.8	11.5 62.0 126.0	5.2 28.2 57.3	.015	.38	.025	.64	.439	11.15	23	75	40	131



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
24 AWG Stranded (7x32) TC Conductors • Twisted Pairs • Overall Beldfoil Shield (100% Coverage) • 24 AWG Stranded TC Drain Wire																		
Semi-rigid PVC Insulation • Chrome PVC Jacket																		
UL AWM Style 2464 (300V 80°C) CSA AWM I A	**9501**	NEC: CMG CEC: CMG FT4	1	See Chart 3 (Tech Info Section)	100 U-500 500 U-1000 1000	30.5 U-152.4 152.4 U-304.8 304.8	2.1 7.5 7.0 14.0 14.0	1.0 3.4 3.2 6.4 6.4	24.0Ω/M′ 78.7Ω/km	18.0Ω/M′ 59.1Ω/km	.156	3.96	75	60%	40	131	74	243
	9502††	NEC: CMG CEC: CMG FT4 P-MSHA-SC-7K-182037	2	See Chart 3 (Tech Info Section)	100 U-500 500 U-1000 1000 10000	30.5 U-152.4 152.4 U-304.8 304.8 3048.0	3.7 15.0 14.5 28.0 30.0 290.0	1.7 6.8 6.6 12.7 13.6 131.8	24.0Ω/M′ 78.7Ω/km	17.0Ω/M′ 55.8Ω/km	.222	5.64	75	60%	30	98	50	164
	9503	NEC: CMG CEC: CMG FT4	3	See Chart 3 (Tech Info Section)	100 U-500 500 U-1000 1000	30.5 U-152.4 152.4 U-304.8 304.8	3.4 15.0 14.5 28.0 30.0	1.5 6.8 6.6 12.7 13.6	24.0Ω/M′ 78.7Ω/km	17.0Ω/M′ 55.8Ω/km	.232	5.89	75	60%	30	98	50	164
	9504	NEC: CMG CEC: CMG FT4	4	See Chart 3 (Tech Info Section)	100 U-500 500 U-1000 1000	30.5 U-152.4 152.4 U-304.8 304.8	4.0 18.0 16.5 35.0 36.0	1.8 8.2 7.5 15.9 16.3	24.0Ω/M′ 78.7Ω/km	17.0Ω/M′ 55.8Ω/km	.265	6.73	75	60%	30	98	50	164
	9505	NEC: CMG CEC: CMG FT4	5	See Chart 3 (Tech Info Section)	100 U-500 500 U-1000 1000	30.5 U-152.4 152.4 U-304.8 304.8	4.7 21.5 23.0 41.0 43.0	2.1 9.8 10.4 18.6 19.5	24.0Ω/M′ 78.7Ω/km	17.0Ω/M′ 55.8Ω/km	.289	7.34	75	60%	30	98	50	164



For Plenum version of 9502, see 82502.

For Plenum versions of 9503, see 89503 or 82503.

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DCR = DC Resistance • TC = Tinned Copper

* Capacitance between conductors.
** Capacitance between one conductor and other conductors connected to shield.
† Spools are one piece, but length may vary ±10% from length shown.
†† Pennsylvania Department of Environmental Resources and United States Mine Safety and Health Administration certification. Request quotations of RG/U cables not listed.

Tefzel is a DuPont trademark.