

85164 Multi-Conductor - High-Temperature Control and Instrumentation Cable



Description:

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

Physical Characteristics (Overall)

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
4	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: 0.344 in.

Pair

Pair Color Code Chart:

Number	Color
1	Black & Red
2	Black & White
3	Black & Green
4	Black & Blue

Mechanical Characteristics (Overall)

Operating Temperature Range: -60°C To +150°C

UL Temperature Rating: 150°C

Bulk Cable Weight: 66.300 lbs/1000 ft.

Max. Recommended Pulling Tension: 112 lbs.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

EU CE Mark: Yes

85164 Multi-Conductor - High-Temperature Control and Instrumentation Cable

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
MIL Order #39 (China RoHS):	Yes

Flame Test

UL Flame Test:	UL1685 UL Loading, VW-1
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Plenum/Non-Plenum

Plenum (Y/N):	No
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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
85164 368100	100 FT	6.600 LB	CLEAR, TRANSPARENT	C	4 PR#20 TEFZEL FS TEFZEL
85164 3681000	1,000 FT	71.000 LB	CLEAR, TRANSPARENT	C	4 PR#20 TEFZEL FS TEFZEL
85164 368500	500 FT	37.000 LB	CLEAR, TRANSPARENT	C	4 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

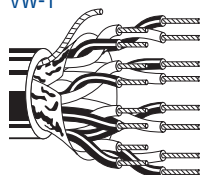
High-Temperature Control and Instrumentation Cables and Computer Cables for EIA RS-232 Applications

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	30.5	6.6	3.0	.015	.38	.025	.64	.344	8.74	23	75	40	131			
				500†	152.4	37.0	16.8													
				1000†	304.8	71.0	32.3													
	85168	8	See Chart 3 (Tech Info Section)	100	30.5	11.5	5.2	.015	.38	.025	.64	.439	11.15	23	75	40	131			
				500†	152.4	62.0	28.2													
				1000†	304.8	126.0	57.3													



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	30.5	2.1	1.0	24.0Ω/M'	18.0Ω/M'	.156	3.96	75	60%	40	131	74	243			
				U-500	U-152.4	7.5	3.4	78.7Ω/km	59.1Ω/km											
				500	152.4	7.0	3.2													
				U-1000	U-304.8	14.0	6.4													
				1000	304.8	14.0	6.4													
	9502††	NEC: CMG CEC: CMG FT4 P-MSHA-SC-7K-182037	2 See Chart 3 (Tech Info Section)	100	30.5	3.7	1.7	24.0Ω/M'	17.0Ω/M'	.222	5.64	75	60%	30	98	50	164			
				U-500	U-152.4	15.0	6.8	78.7Ω/km	55.8Ω/km											
				500	152.4	14.5	6.6													
				U-1000	U-304.8	28.0	12.7													
				1000	304.8	30.0	13.6													
				10000	3048.0	290.0	131.8													
	9503	NEC: CMG CEC: CMG FT4	3 See Chart 3 (Tech Info Section)	100	30.5	3.4	1.5	24.0Ω/M'	17.0Ω/M'	.232	5.89	75	60%	30	98	50	164			
				U-500	U-152.4	15.0	6.8	78.7Ω/km	55.8Ω/km											
				500	152.4	14.5	6.6													
				U-1000	U-304.8	28.0	12.7													
				1000	304.8	30.0	13.6													
	9504	NEC: CMG CEC: CMG FT4	4 See Chart 3 (Tech Info Section)	100	30.5	4.0	1.8	24.0Ω/M'	17.0Ω/M'	.265	6.73	75	60%	30	98	50	164			
				U-500	U-152.4	18.0	8.2	78.7Ω/km	55.8Ω/km											
				500	152.4	16.5	7.5													
				U-1000	U-304.8	35.0	15.9													
				1000	304.8	36.0	16.3													
	9505	NEC: CMG CEC: CMG FT4	5 See Chart 3 (Tech Info Section)	100	30.5	4.7	2.1	24.0Ω/M'	17.0Ω/M'	.289	7.34	75	60%	30	98	50	164			
				U-500	U-152.4	21.5	9.8	78.7Ω/km	55.8Ω/km											
				500	152.4	23.0	10.4													
				U-1000	U-304.8	41.0	18.6													
				1000	304.8	43.0	19.5													

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.