

85231 Multi-Conductor - Control and Instrumentation Cable, 2 Conductors Cabled

**Description:**

16 AWG stranded (19x29) TC conductors, conductors cabled, Tefzel® insulation, drain wire, overall Beldfoil® Aluminum-Kapton® Shield (100% coverage), Tefzel® jacket.

Physical Characteristics (Overall)**Conductor****AWG:**

# Conductors	AWG	Stranding	Conductor Material
2	16	19x29	TC - Tinned Copper

Insulation**Insulation Material:**

Insulation Trade Name	Insulation Material	Wall Thickness (in.)
Tefzel®	ETFE - Ethylene Tetrafluoroethylene	.0135

Outer Shield**Outer Shield Material:**

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

Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
18	Stranded	TC - Tinned Copper

Outer Jacket**Outer Jacket Material:**

Outer Jacket Trade Name	Outer Jacket Material	Nom. Wall Thickness (in.)
Tefzel®	ETFE - Ethylene Tetrafluoroethylene	.020

Overall Cabling**Overall Cabling Color Code Chart:**

Number	Color
1	Black
2	Red

Overall Nominal Diameter: 0.210 in.

Mechanical Characteristics (Overall)

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

Non-UL Temperature Rating: 150°C

Bulk Cable Weight: 40.200 lbs/1000 ft.

Max. Recommended Pulling Tension: 60 lbs.

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

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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: VW-1

Plenum/Non-Plenum

Plenum (Y/N): No

Electrical Characteristics (Overall)

Nom. Inductance:

Inductance (μH/ft)

.165

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)

44

Nom. Capacitance Cond. to Other Conductor & Shield:

Capacitance (pF/ft)

79

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

4.27

Max. Operating Voltage - UL:

Voltage

300 V RMS

Max. Recommended Current:

Current

6.5 Amps per conductor @ 25°C

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
85231 3681000	1,000 FT	38.000 LB	CLEAR, TRANSPARENT	C	2#16 TEFZEL FS TEFZEL
85231 368500	500 FT	17.000 LB	CLEAR, TRANSPARENT	C	2#16 TEFZEL FS TEFZEL

Notes:

C = CRATE REEL PUT-UP.

High-Temperature

Unshielded

Control and Instrumentation Cables

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

20 AWG Stranded (7x28) Tinned Copper Conductors • Conductors Cabled

Tefzel® Insulation • Clear Tefzel Jacket

300V RMS 150°C VW-1	85220	—	2	Black, Red	100 1000 [†]	30.5 304.8	3.8 23.0	1.7 10.4	.015 .38	.020 .51	.185 4.70			
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16 AWG Stranded (19x29) Tinned Copper Conductors • Conductors Cabled

Tefzel Insulation • Clear Tefzel Jacket

300V RMS 150°C VW-1	85221	—	2	Black, Red	500 [†] 1000 [†]	152.4 304.8	15.0 34.0	6.8 15.4	.015 .38	.019 .48	.211 5.36			
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85102	—	2	See Chart 2 (Tech Info Section)	500 [†] 1000 [†]	152.4 304.8	14.0 32.0	6.4 14.5	.015 .38	.019 .48	.211 5.36				
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85103	—	3	See Chart 2 (Tech Info Section)	500 [†] 1000 [†]	152.4 304.8	20.0 43.0	9.1 19.5	.015 .38	.019 .48	.223 5.66				
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85105	—	5	See Chart 2 (Tech Info Section)	500 [†] 1000 [†]	152.4 304.8	35.0 68.0	15.9 30.9	.015 .38	.019 .48	.268 6.81				
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85107	—	7	See Chart 2 (Tech Info Section)	100 1000 [†]	30.5 304.8	11.5 105.0	5.2 47.7	.015 .38	.024 .61	.303 7.70				
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85109	—	9	See Chart 2 (Tech Info Section)	500 [†] 1000 [†]	152.4 304.8	59.0 119.0	26.8 54.0	.015 .38	.024 .61	.354 8.99				
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[†] Spools are one piece, but length may vary $\pm 10\%$ from length shown.

Tefzel insulated and jacketed cables are particularly well suited for harsh environments due to outstanding mechanical toughness of the material, as well as its high-temperature and radiation resistant characteristics.

Tefzel cables are used extensively in chemical plants, nuclear plants, and fossil fuel power plants. Typical applications are data recording, communication, telemetry, and monitoring pressure or material flow.

Tefzel is a DuPont trademark.

BELDEN

High-Temperature

Overall Beldfoil® Shield

Control and Instrumentation Cables

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		Nominal Capacitance			
					Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	Inch	mm	* pF/ Ft.	* pF/ m	** pF/ Ft.	** pF/ m

22 AWG Stranded (7x30) TC Conductors • Conductors Cabled • Special Beldfoil Shield (100% Coverage) • 22 AWG (7x30) Stranded TC Drain Wire**FEP Insulation • Red Silicone Rubber Jacket • Noise Reducing Tape**

Jacket working voltage 2000V DC, shield to ground VW-1	83394	AWM 4516	2	Black, White	100 500 [†]	30.5 152.4	3.6 14.5	1.6 6.6	.015 500 [†]	.38 152.4	.030 13.0	.76 5.9	.199	5.05	22	72	40	131
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70°C (min.) to 150°C (max.) operating temperature.

Jacket working voltage 2000V DC, shield to ground VW-1	83395	AWM 4516	3	Black, Red, White	100 500 [†]	30.5 152.4	3.9 14.0	1.8 6.4	.015 500 [†]	.38 152.4	.031 14.0	.79 6.4	.208	5.28	22	72	40	131
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70°C (min.) to 150°C (max.) operating temperature.

20 AWG Stranded (7x28) TC Conductors • Twisted Pair • Special Beldfoil Shield (100% Coverage) • 20 AWG (7x28) Stranded TC Drain Wire**FEP Insulation • Yellow Silicone Rubber Jacket • Noise Reducing Tape**

Jacket working voltage 2000V DC, shield to ground VW-1	83393	AWM 4516	2	Black, Red	100 ^{††} 500 [†]	30.5 152.4	4.2 18.5	1.9 8.4	.020 500 [†]	.51 152.4	.030 17.0	.76 7.8	.242	6.15	22	72	40	131
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70°C (min.) to 150°C (max.) operating temperature.

20 AWG Stranded (7x28) TC Conductors • Conductors Cabled • Overall Beldfoil Shield (100% Coverage) • Drain Wire**Tefzel® Insulation • Clear Tefzel Jacket**

300V RMS 150°C VW-1	85230	—	2	Black, Red	500 [†] 1000 [†]	152.4 304.8	12.5 29.0	5.7 13.2	.015 500 [†]	.38 304.8	.020 29.0	.51 13.2	.182	4.62	31	102	59	194
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300V RMS 150°C VW-1	85240	—	3	Black, Red, Green	100 1000 [†]	30.5 304.8	4.6 30.0	2.1 13.6	.015 500 [†]	.38 304.8	.020 30.0	.51 13.6	.193	4.90	27	87	48	157
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**16 AWG** Stranded (19x29) TC Conductors • Conductors Cabled • Overall Beldfoil Shield (100% Coverage) • Drain Wire**Tefzel Insulation • Clear Tefzel Jacket**

300V RMS 150°C VW-1	85231	—	2	Black, Red	100 500 [†] 1000 [†]	30.5 152.4 304.8	5.6 17.0 38.0	2.5 7.8 17.3	.020 500 [†] 1000 [†]	.51 152.4 304.8	.020 17.0 38.0	.51 17.3	.210	5.33	44	144	79	259
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300V RMS 150°C VW-1	85241	—	3	Black, Red, Green	500 [†] 1000 [†]	152.4 304.8	22.5 49.0	10.3 22.3	.020 500 [†] 1000 [†]	.51 152.4 304.8	.020 17.0 38.0	.51 17.3	.223	5.66	34	112	61	201
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TC = Tinned Copper

*Capacitance between conductors. **Capacitance between one conductor and other conductors connected to shield.

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

††100 ft. put-up one piece, exact length.

Tefzel and Kapton are DuPont trademarks.