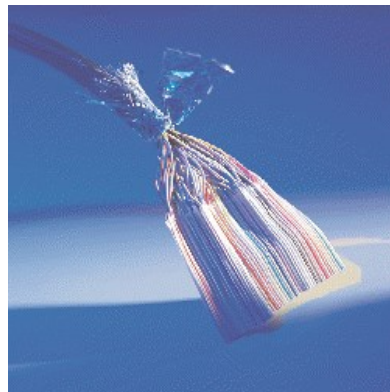
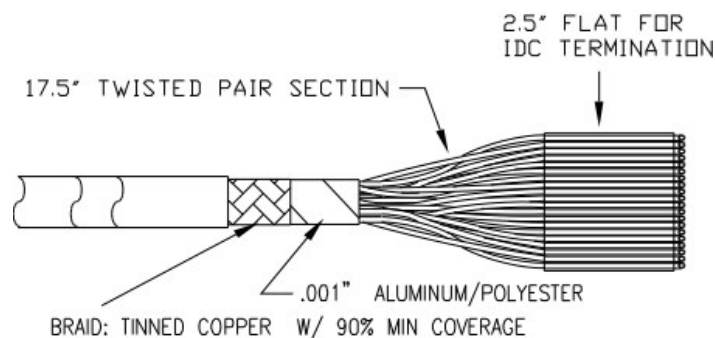
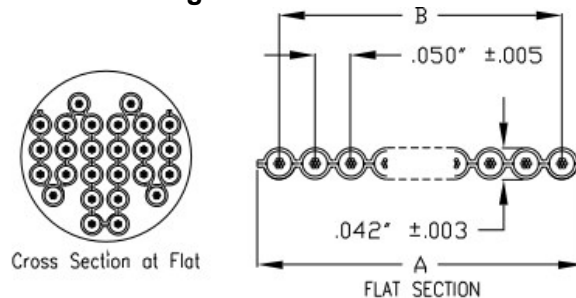


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Part Information:

**Part Number:** 168-2829-0XX**Description:** .050 centerline, 28 AWG Low Smoke / Halogen Free Round Twist 'N' Flat, shielded**Family:** Zero Halogen

Outline Drawing



Introduction

Spectra-Strip Round Low Smoke / Halogen Free Twist 'N' Flat cable combines the time and cost savings of mass termination with the added benefits of halogen free, highly flame retardant cable... ideal for use in closed environments where ventilation is poor, such as subways, elevators, and ships. It is designed to reduce the generation of toxic and corrosive gases that are emitted from typical PVC insulated cables during combustion. These gases can injure personnel enclosed within these confined spaces and can also corrode delicate components within electronic equipment. Many well-documented cases exist of extensive injury and death occurring as a result of fires involving these PVC generated toxic gasses, e.g., the London Subway fire, the Beverly Hills Supperclub fire, the Dusseldorf Airport fire, and the HMS Sheffield sinking. ([Click here for good background reading](#))

This cable is well suited to equipment such as communications and computing devices, within closed environments, or wherever the crosstalk performance of twisted pairs is needed. Labor savings of up to 95% as compared to automatic strip and crimp termination are readily achieved.

Twist 'N' Flat cable consists of stranded round conductors insulated with color coded polyolefin,

twisted into pairs and laminated between layers of polyolefin film to form a planar cable. The twist in adjacent pairs is reversed to reduce cable crosstalk even further. Standard cables alternate 18-inch (45,7cm) long twisted pair sections with 2 inch (5,1cm) flat sections in which the conductors are laminated in parallel.

Twist 'N' Flat cable can also be fabricated to your custom requirements. Flat sections can be made longer to allow room for multiple connectors. Twisted pair length can be varied from a minimum of 6 inches to many feet to conform to your requirements. The lamination can be fabricated "loose" at specified points to provide easy access to individual conductors. For complete details, consult the Spectra-Strip sales office nearest you.

Features/Benefits

- Twisted pairs for significant crosstalk reduction
- Up to 64 conductors (32 pairs) with precise spacing for controlled electrical characteristics
- Double sided lamination provides excellent conductor strain relief and mass termination from either side of cable
- Reduced assembly costs compared with discrete or hand lamination terminations
- Highly flame retardant
- Temperature rating up to +90C
- Reduced generation of smoke or toxic / corrosive gases during combustion
- Helps to meet FCC requirements for EMI / RFI suppression
- Custom capabilities: laminated sections can be fabricated at custom intervals, from 6" minimum twist length, to maximum determined by put-up, up to ten different twist lengths in the same cable and repeat.



Specifications

Physical	
Conductors	28 AWG 7/36 strand tinned copper
Color code	Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White, Black and Repeat, Tan Common.
Insulation	.010" Halogen Free FR Polyolefin
Laminate	.005" Halogen Free FR Polyolefin top and bottom
Cable Thickness:	.042" \pm .003" (flat section)
Conductor spacing:	Twisted pair centers: .100" nom. Conductor centers in flats: .050" \pm .005"
Shielding	Overall Aluminum Polyester tape (Aluminum out), with 85% minimum coverage 36 AWG tinned copper braid.
Jacket	Halogen Free FR Polyolefin, .030" nom wall
Temperature Rating	- 25° C to + 90° C

Electrical	
Impedance	75 ohms nom single ended
Capacitance	24 pF / ft @ 1 MHz, single ended
Insulation Resistance	10 ¹⁰ ohms per 10 ft min
Propagation Delay	1.6 ns / ft nom
Voltage Rating	300 V

Current Rating	1.3 A
Test Mode	groundsignal, with shield grounded
Crosstalk	10' sample, 5 ns rise time. Unbalanced (2 lines driven) NE = 2.3% FE = 1.3 % nominal

Toxicity and Corrosivity Results

Property	Standard	Requirement	Results
Flame and Fire Propagation	IEC 332-1	Pass	Pass
Smoke Density	ASTM E 662 IEC 1034-1 and 2	DS < 250 flaming and non flaming modes Pass	Flaming 0.62/0.75, non-flaming 0.24/16.2 Pass
Toxicity of Fire Gasses	AIS 1000.001	HF < 100 HCl < 150 HCN <150 SO ₂ +H ₂ S <100 CO <3500 NO + NO ₂ <100	HF <100 HCl <150 HCN<150 SO ₂ +H ₂ S <100 CO <3500 NO + NO ₂ <100
Corrosivity of Fire Gasses	IEC 754-2	PH >4, conductivity <100uS / cm	PH 4.5, conductivity none
UV Resistance	IEC 68-2-5	No discoloration or stickness	NA
Radiation Resistance	IEC 544-2-5	Index >5.7	NA
Acid Gas Generation	MIL-C-24643		0.47%
Smoke Index	NES-711		5.3
Toxicity Index	NES-713		1.4
Limiting Oxygen Index	ASTM D 2863		39

Notes On Standards:

1. ASTM E662: STANDARD TEST METHOD FOR SPECIFIC OPTICAL DENSITY OF SMOKE

2. ATS 1000.001: AIRBUS INDUSTRY TECHNICAL SPECIFICATION, FIRE TEST SPECIFICATION
3. IEC 68-2-5 SIMULATED SOLAR RADIATION AT GROUND LEVEL
4. IEC 332-1: TESTS ON ELECTRIC CABLES UNDER FIRE CONDITIONS
5. IEC 754-2: TEST ON GASES EVOLVED DURING COMBUSTION OF ELECTRIC CABLES
6. IEC 544-2-4: GUIDE FOR DETERMINING THE EFFECTS OF IONIZING RADIATION ON INSULATING MATERIALS.
7. IEC 1034-1-2: TEST FOR THE MEASUREMENT OF SMOKE DENSITY OF ELECTRIC CABLES BURNING UNDER DEFINED CONDITIONS



Ordering Information

Part Number	No. Cond	No. Pairs	Ref Dia.	Width "A"		Span "B"	
				Inches	(mm)	Inches	(mm)
				Nom	Nom	Nom	Nom
168-2829-010	10	5	.250	.526	(13,36)	.450	(11,43)
168-2829-014	14	7	.260	.726	(18,44)	.650	(16,51)
168-2829-016	16	8	.280	.826	(20,98)	.750	(19,05)
168-2829-020	20	10	.290	1.026	(26,06)	.950	(24,13)
168-2829-026	26	13	.310	1.326	(33,68)	1.250	(31,75)
168-2829-034	34	17	.360	1.726	(43,84)	1.650	(41,91)
168-2829-040	40	20	.390	2.026	(51,46)	1.950	(49,53)
168-2829-050	50	25	.430	2.526	(64,16)	2.450	(62,23)
168-2829-060	60	30	.470	3.026	(76,86)	2.950	(74,93)
168-2829-064	64	32	.480	3.226	(81,94)	3.150	(80,01)

** XX =s number of conductors