

Spectra-Strip® Halogen-Free Flame-Retardant Cables

[Back To Index](#)

for today's demanding requirements...

Amphenol Spectra-Strip now offers a broad line of halogen-free, flame retardant cables. Halogen-free cable is ideally suited for use in congested areas where ventilation is poor, such as buses, subways, elevators, data processing rooms, ships, aircraft, nuclear facilities, and other enclosed environments...anywhere PVC is forbidden, or where personnel and equipment could be injured by toxic and corrosive gases. (When PVC heats up, or catches fire, toxic and corrosive halogens escape.) Beyond its environmental benefits, halogen-free cable prevents memory degradation due to outgassing PVC corrosion. Protection of components from corrosion is critical in applications requiring high speed computing. Non-PVC cables are a growing trend for government contractors. Spectra-Strip manufactures its halogen-free cables in many of its popular configurations.

benefits

- Wide range of operating temperatures on most configurations: -25°C to +90°C (-65°C to +150°C available)
- Highly flame retardant insulation: limiting oxygen index on most configurations of 39%
- Reduced generation of toxic and corrosive gases during combustion
- Low smoke generation upon combustion
- Popular configurations for a wide variety of applications
- Mass terminable
- Custom capabilities available

general characteristics

Limiting oxygen index: ASTM-D-2863 39%

Toxicity index: NES 713, 1.4

Optical smoke index: NES 711, 5.3

Acid gas generation: MIL-C 24643, 0.47%

Flammability: VW-1

UL: approved or pending for each configuration

.025" Loose Pair Twist 'N' Flat®
425-3016 series

[Page 33](#)

Spectra-Zip®
193-2829 series

[Page 46](#)

Twist 'N' Flat®
132-2829 series

[Page 47](#)

Loose Pair Twist 'N' Flat®
468-2829 series

[Page 48](#)

Loose Pair Round Twist 'N' Flat®
168-2829 series

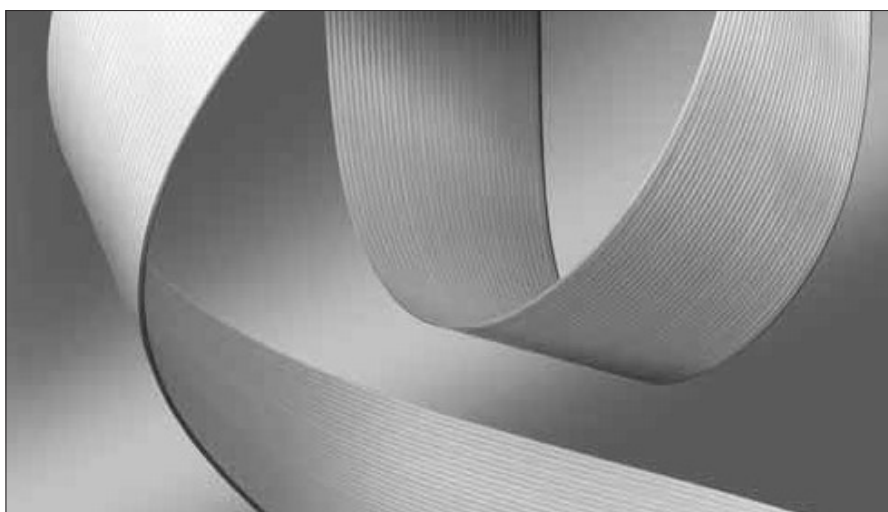
[Page 49](#)

720 Sherman Avenue Hamden CT, 06514 in CT, call 1.203.281.3200 Fax 1.203.281.5872
1.800.846.6400 sales@spectra-strip.com http://www.spectra-strip.com

45

Halogen-Free Zip cable

193-2829 series



description

Halogen-free Zip Cable is designed to reduce the generation of toxic and corrosive gases during combustion. Halogen-free Zip cable can be used in more severe operating environments than standard flat ribbon cables. This cable consists of 28 AWG stranded round conductors on .050" centers with an extruded halogen-free FR, polyolefin insulation. This insulation allows the cable to meet UL VW-1 flammability requirements without the use of halogenated flame retardants.

benefits

- Wide range of operating temperatures: -25°C to +90°C
- Highly flame retardant insulation: limiting oxygen index of 39%
- Reduced generation of toxic and corrosive gases during combustion
- Number one conductor stripe for easy polarity identification
- Low smoke generation upon combustion

order information

PART #	# COND	WIDTH A " (mm)	SPAN B " (mm)
193-2829-009	9	.450 (11,43)	.400±.007 (10,16±0,18)
193-2829-010	10	.500 (12,70)	.450±.007 (11,43±0,18)
193-2829-014	14	.700 (17,78)	.650±.007 (16,51±0,18)
193-2829-015	15	.750 (19,05)	.700±.007 (17,78±0,18)
193-2829-016	16	.800 (20,32)	.750±.011 (19,05±0,28)
193-2829-020	20	1.000 (25,40)	.950±.011 (24,13±0,28)
193-2829-024	24	1.200 (30,48)	1.150±.011 (29,21±0,28)
193-2829-025	25	1.250 (31,75)	1.200±.011 (30,48±0,28)
193-2829-026	26	1.300 (33,02)	1.250±.011 (31,75±0,28)
193-2829-034	34	1.700 (43,18)	1.650±.011 (41,91±0,28)
193-2829-036	36	1.800 (45,72)	1.750±.015 (44,45±0,38)
193-2829-037	37	1.850 (47,00)	1.800±.015 (45,72±0,38)
193-2829-040	40	2.000 (50,80)	1.950±.015 (49,53±0,38)
193-2829-050	50	2.500 (63,50)	2.450±.015 (62,23±0,38)
193-2829-060	60	3.000 (76,20)	2.950±.015 (74,93±0,38)
193-2829-064	64	3.200 (81,28)	3.150±.015 (80,01±0,38)

Consult factory for 193-2821-0XX -65°C to +150°C version

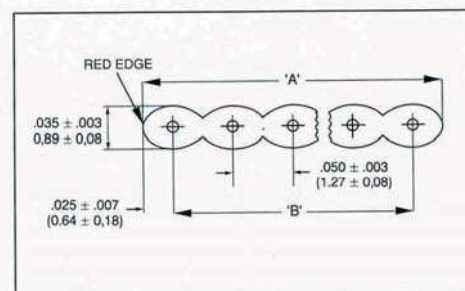
characteristics

physical

Conductors: 28 AWG, 7/36 strand, tinned copper
Number of conductors: see order information chart
Insulation: .010" wall extruded, Halogen-Free, FR, Polyolefin
Thickness: .035", ±.003"
Pitch: .050" centers, ±.003"
Color code: white with edge mark
Limiting oxygen index: ASTM-D-2863 39%
Halogen content: MIL-C-24643, .01%
Toxicity index: NES 713, 1.4
Smoke index: NES 711, 5.3
Acid gas generation: MIL-C-24643, 0.47%
Flammability: VW-1

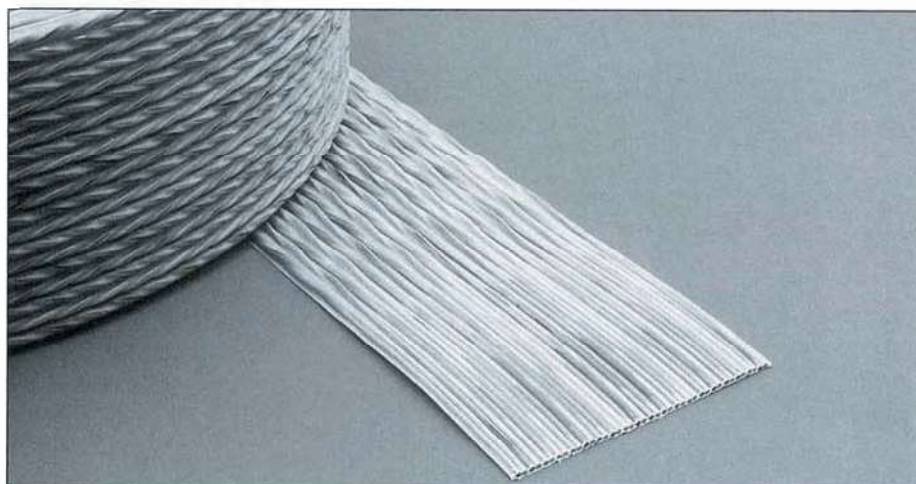
electrical

Voltage: 300 V
Current rating: 1 amp nominal @ 10°C above ambient
Temperature rating: -25°C to +90°C (-13°F to 194°F)
Impedance: 100 ohms nominal
Capacitance: 13.0 pf/ft. (42,7 pf/m) nominal @ 1.0 MHz
Propagation delay: 1.45 ns/ft. (4,6 ns/m) nominal
Insulation resistance: 10¹⁰ ohms - 10 ft. (3 m) min.
Mode: ground-signal-ground



Halogen-Free Twist 'N' Flat® planar cable

132-2829 series



characteristics

physical

Conductors: 28 AWG, 7/36 strand, tinned copper
Insulation: .010" wall extruded, Halogen-Free, FR, Polyolefin
Thickness: .042", $\pm .003$ " (flat section)
Laminate: Halogen-Free, FR Polyolefin
Pitch: flats: .050" centers, $\pm .005$ ", twisted-pairs: .100" (nominal) centers
Color code: tan common, brown, red, orange, yellow, green, blue, violet, gray, white, black, (repeat)
Limiting oxygen index: ASTM-D-2863 39%
Toxicity index: NES 713, 1.4
Smoke index: NES 711, 5.3
Acid gas generation: MIL-C-24643, 0.47%

electrical

Voltage: 300 V
Current rating: 1 amp nominal @ 10°C above ambient
Temperature rating: -25°C to +90°C (-13°F to 194°F)
Impedance: 100 ohms nominal
Capacitance: 14.0 pF/ft. (45.92 pF/m) nominal @ 1.0 MHz
Propagation delay: 1.6 ns/ft. (5.3 ns/m) nominal
Insulation resistance: 10^{10} ohms - 10 ft. (3 m) min.
Unbalanced crosstalk: 10' sample, 5 ns rise time with 2 lines driven, near end = 3.9%, far end = 3.7%
Mode: ground-signal

description

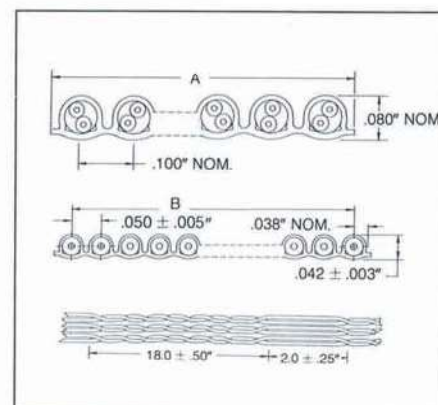
Halogen-Free Twist 'N' Flat cable combines the benefits of mass-terminable flat cable with the electrical performance of twisted pairs, with the added benefits of halogen-free, highly flame retardant cable. This cable is well suited to equipment such as communications and computing applications, within closed environments, or wherever PVC is forbidden. This mass-terminable cable can attain up to 95% labor-savings over discrete strip & crimp termination methods. Twist 'N' Flat consists of 18" (45,7 cm) sections of stranded round conductors, twisted into pairs, with 2" (5,1 cm) flat sections of parallel conductors for termination.

benefits

- Twist is reversed in adjacent pairs for reduced cross-talk
- Wide range of operating temperatures: -25°C to +90°C
- Highly flame retardant: limiting oxygen index of 39%
- Reduced generation of toxic and corrosive gases during combustion
- Low smoke generation upon combustion
- Put-up in convenient 100' rolls
- Custom capabilities available:
- Custom twist sections (6" to several feet), up to five different twist lengths in same cable, and repeat
- Loose laminate sections for access to individual conductors

order information

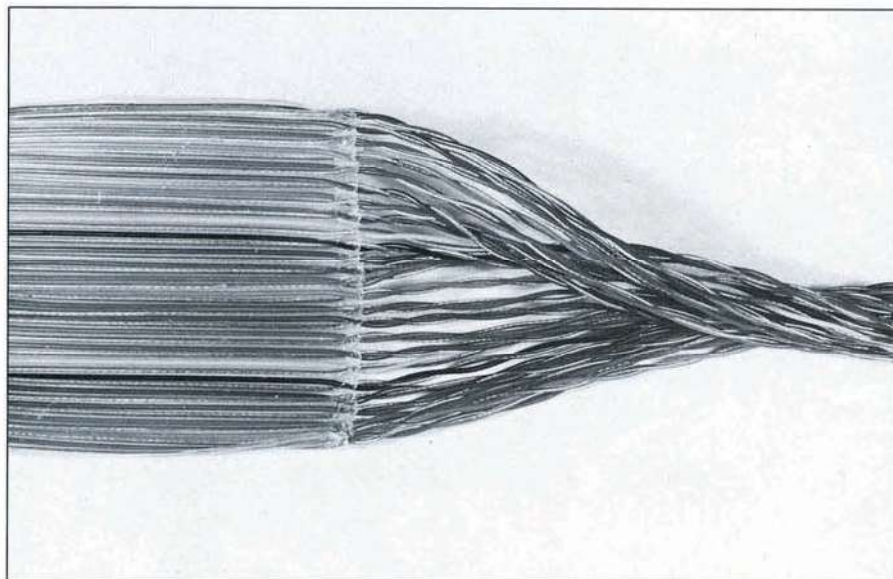
PART #	# PAIRS	WIDTH A " (mm)	SPAN B " (mm)
132-2829-010	5	.526 (13,36)	.450 \pm .015 (11,43 \pm 0,38)
132-2829-014	7	.726 (18,44)	.650 \pm .015 (16,51 \pm 0,38)
132-2829-016	8	.826 (20,98)	.750 \pm .015 (19,05 \pm 0,38)
132-2829-020	10	1.026 (26,06)	.950 \pm .015 (24,13 \pm 0,38)
132-2829-026	13	1.326 (33,68)	1.250 \pm .015 (31,75 \pm 0,38)
132-2829-034	17	1.726 (43,84)	1.650 \pm .015 (41,91 \pm 0,38)
132-2829-036	18	1.826 (46,38)	1.750 \pm .015 (44,45 \pm 0,38)
132-2829-040	20	2.026 (51,46)	1.950 \pm .020 (49,53 \pm 0,51)
132-2829-050	25	2.526 (64,16)	2.450 \pm .020 (62,23 \pm 0,51)
132-2829-060	30	3.026 (76,86)	2.950 \pm .020 (74,93 \pm 0,51)
132-2829-064	32	3.226 (81,94)	3.125 \pm .025 (80,01 \pm 0,64)



Consult factory for 132-2821-0XX -65°C to +150°C version

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 1.800.846.6400 sales@spectra-strip.com http://www.spectra-strip.com

Halogen-Free Loose Pair Twist 'N' Flat® cable 468-2829 series



description

Halogen-free, Loose Pair Twist 'N' Flat Cable combines the electrical characteristics of loose conductor, twisted pair cable with the time and cost savings of mass-terminated cable...with the added bonus of halogen-free materials ideal for use in closed environments. It is designed to reduce the generation of toxic and corrosive gases during combustion. It consists of insulated stranded round conductors, twisted into loose pairs. Every 17.5", the conductors are laminated into parallel .050" center 2.5" sections for mass-termination.

benefits

- Highly flame retardant
- Reduced generation of smoke and toxic and corrosive gases during combustion
- Custom capabilities: laminated sections can be fabricated at custom intervals, from 6" minimum twist length, up to ten different twist lengths in same cable and repeat, to maximum determined by put-up
- Bulk put-up on reel in round form

order information

PART #	# PAIRS	WIDTH A " (mm)	SPAN B " (mm)
468-2829-010	5	.526 (13,36)	.450 (11,43)
468-2829-014	7	.726 (18,44)	.650 (16,51)
468-2829-016	8	.826 (20,98)	.750 (19,05)
468-2829-020	10	1.026 (26,06)	.950 (24,13)
468-2829-026	13	1.326 (33,68)	1.250 (31,75)
468-2829-034	17	1.726 (43,84)	1.650 (41,91)
468-2829-040	20	2.026 (51,46)	1.950 (49,53)
468-2829-050	25	2.526 (64,16)	2.450 (62,23)
468-2829-060	30	3.026 (76,86)	2.950 (74,93)
468-2829-064	32	3.226 (81,94)	3.150 (80,01)

Consult factory for 468-2832-0XX -65°C to +150°C version

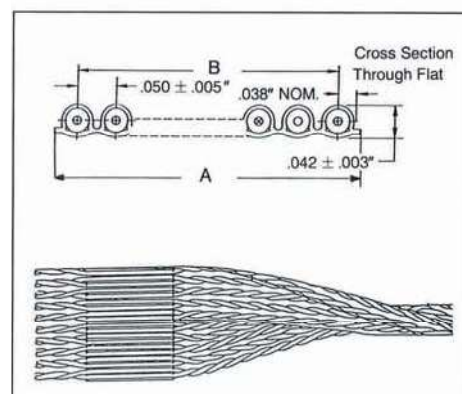
characteristics

physical

Conductors: 28 AWG, 7/36 strand, tinned copper
Insulation: .010" wall extruded, Halogen-Free, FR, Polyolefin
Color code: tan common, brown, red, orange, yellow, green, blue, violet, gray, white, black, (repeat)
Flat pitch: .050" centers, $\pm .005$ "
Flat laminate: halogen-free polyolefin, white, .005"
Limiting oxygen index: ASTM-D-2863
 primary: 39%, laminate: 28%

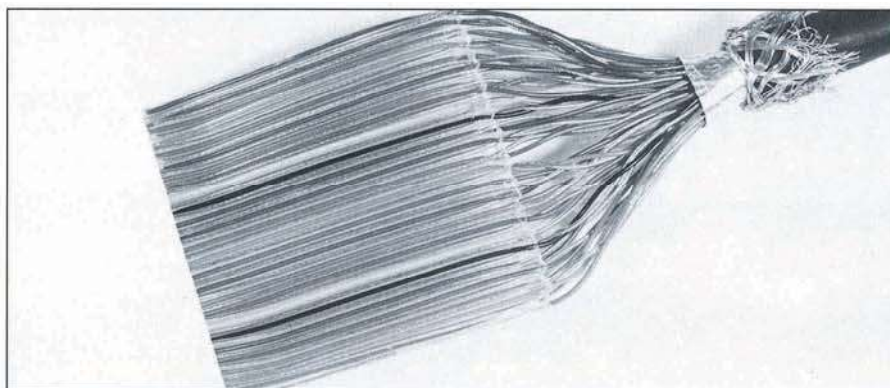
electrical

Voltage: 300 V
Current rating: 1.3 amp nominal @ 10°C above ambient
Temperature rating:
 -25°C to +90°C
 (-13°F to 194°F)
Impedance: 120 ohms nominal
Capacitance: 11.3 pf/ft. (37.0 pf/m) nominal @ 1.0 MHz
Propagation delay: 1.6 ns/ft. (5.3 ns/m) nominal
Insulation resistance: 10^{10} ohms - 10 ft. (3 m) min.
Unbalanced crosstalk: 10' sample, 5 ns rise time with 2 lines driven, near end = 4.0%
 far end = 1.6% nominal
Mode: ground-signal
UL: pending



Halogen-Free Loose Pair Round Twist 'N' Flat® cable

168-2829 series



description

Halogen-free, Loose Pair Round Twist 'N' Flat Cable combines the electrical characteristics of loose conductor, twisted pair cable with the time and cost savings of mass-terminated cable...with the added bonus of halogen-free materials ideal for use in closed environments. It is designed to reduce the generation of toxic and corrosive gases during combustion. It consists of an inner cable of insulated stranded round conductors, twisted into loose pairs. Every 20", the conductors are laminated into parallel .050" center 2.5" sections for mass-termination. It is covered with a foil shield, a tinned-copper braid, and a halogen-free jacket.

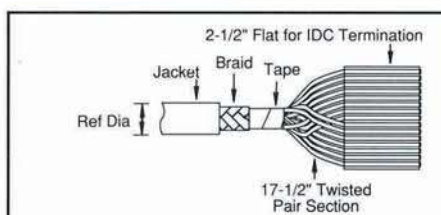
benefits

- Highly flame retardant
- Reduced generation of smoke or toxic/corrosive gases during combustion
- Help 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 same cable and repeat

order information

PART #	# PAIRS	WIDTH A " (mm)	SPAN B " (mm)	REF. DIA. " X=0 (X=1,2)
168-2829-X10	5	.526 (13,36)	.450 (11,43)	.250 (.220)
168-2829-X14	7	.726 (18,44)	.650 (16,51)	.260 (.230)
168-2829-X16	8	.826 (20,98)	.750 (19,05)	.280 (.250)
168-2829-X20	10	1.026 (26,06)	.950 (24,13)	.290 (.260)
168-2829-X26	13	1.326 (33,68)	1.250 (31,75)	.310 (.280)
168-2829-X34	17	1.726 (43,84)	1.650 (41,91)	.360 (.330)
168-2829-X40	20	2.026 (51,46)	1.950 (49,53)	.390 (.360)
168-2829-X50	25	2.526 (64,16)	2.450 (62,23)	.430 (.400)
168-2829-X60	30	3.026 (76,86)	2.950 (74,93)	.470 (.440)
168-2829-X64	32	3.226 (81,94)	3.150 (80,01)	.480 (.450)

Consult factory for
168-2832-XXX
-65°C to +150°C version



characteristics

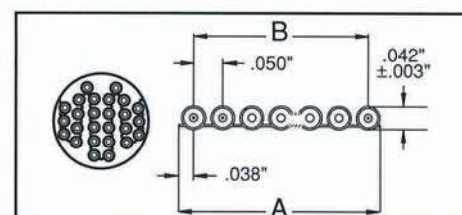
physical

Conductors: 28 AWG, 7/36 strand, tinned copper
Insulation: .010" wall extruded, Halogen-Free, FR, Polyolefin
Color code: tan common, brown, red, orange, yellow, green, blue, violet, gray, white, black, (repeat)
Flat pitch: .050" centers, $\pm .005$ "
Flat laminate: halogen-free polyolefin, white, .005"
Foil Shield: Aluminum/polyester
Braid: tinned-copper, with minimum 90% coverage
Jacket: Halogen-free polyolefin, .030" wall
Overall cable length: 8-24": $\pm .500$ ", 24"-25": ± 1.0 ", 25'+: ± 2.0 "
Limiting oxygen index: ASTM-D-2863 39%

electrical

(fully shielded version)

Voltage: 300 V
Current rating: 1 amp nominal @ 10°C above ambient
Temperature rating: -25°C to +90°C (-13°F to 194°F)
Jacket: -20°C to +90°C
Impedance: 75 ohms nominal
Capacitance: 24.0 pF/ft. (78,7 pF/m) nominal @ 1.0 MHz
Propagation delay: 1.6 ns/ft. (5,3 ns/m) nominal
Insulation resistance: 10¹⁰ ohms - 10 ft. (3 m) min.
Unbalanced crosstalk: 10' sample, 5 ns rise time with 2 lines driven, near end = 2.3% far end = 1.3% nominal
Mode: ground-signal, with shield grounded
UL: pending



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