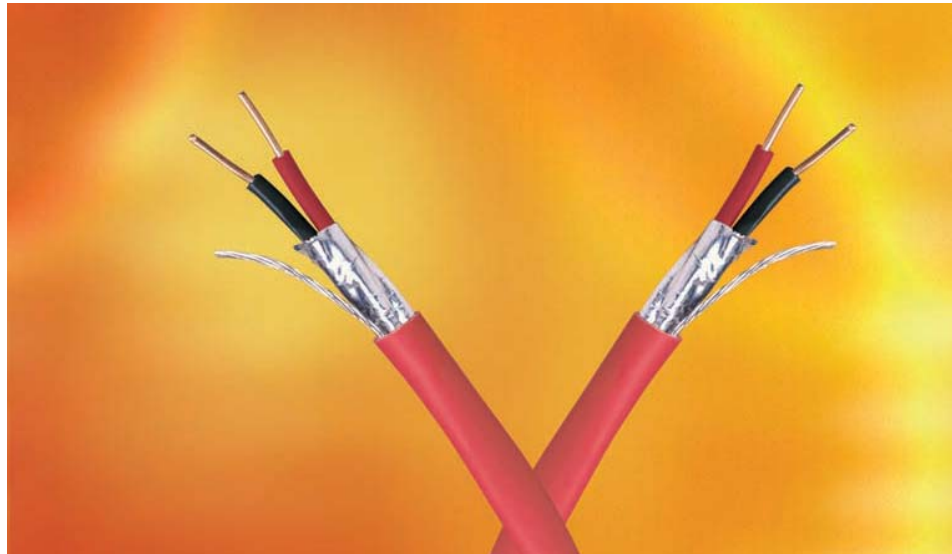


NP 249

2-hour Fire Rated Cables

2-hour Rated Safe-T-Line CI and CIC cables ensure the continued operation of a building's EVAC systems in the event of fire. ABS-approved CI cables are suitable for shipboard application and PLTC-CI cables handle controlled shutdown situations in industrial environments.



We Offer a Full Line of Fire-resistive, 2-hour Rated New Generation® Circuit Integrity (CI) and Circuit Integrity in Conduit (CIC) Cables

We now offer a full line of high quality, high reliability 2-hour rated CI and CIC cables, including:

- Safe-T-Line CI cables that meet the Fire Alarm Cable System Survivability requirements of NFPA 70 and NFPA 72/2002 - *non-conduit only*
- Safe-T-Line CIC (CI cables in conduit) that meet NEC Fire Alarm Survivability requirements in 1/2" conduits
- PLTC-CI cables for controlled emergency shutdowns of industrial processes
- ABS-type Approved Low Smoke Zero Halogen (LSZH) CI cables for shipboard use

Survivable System Choices

When life-saving Emergency Voice-Alarm Communications (EVAC) systems are installed, there are three means by which to meet the 2-hour circuit integrity code requirements:

- Structural/architectural 2-hour chase that is not a means of exit - a very expensive and often unsightly or impossible choice if the building is being rehabilitated
- Mineral Insulated (MI) cables - a very expensive cable type that is also laborious to install
- Safe-T-Line continuous length, flexible-extrusion, fire-resistive circuit integrity cables, or similar make - the most economical choice and the easiest installation option

EVAC System Solutions

To be effective, EVAC systems must remain operational for two hours. To meet this 2-hour operational need offers:

- *Safe-T-Line Circuit Integrity Riser-rated cables* (codes with UM and FM suffixes); these cables are FPLR-CI rated and UL Listed for circuit integrity when installed exclusive of conduit. Their installation should include fire stop materials,

cable runs without splices through the fire zone and terminations no less than 12 inches beyond the fire-rated wall or floor bounding the fire zone.

- *Safe-T-Line Circuit Integrity in Conduit (CIC) Riser-rated cables* (codes with UZ and FZ suffixes); these cables are FPLR rated, and UL Listed for circuit integrity when installed in conduit according to FHIT #30 (UL).

Easier to Terminate and Install

To meet the needs of installers, Fire Resistive Safe-T-Line cables are manufactured with a user-friendly, aluminum-polyester Beldfoil® shielding tape, instead of the copper tapes used by other manufacturers. This makes our CI cable the most easily terminated cable of its kind.

Shipboard 2-hour Rated CI Cables

We also offer ABS-type approved products (Part Nos. 1320SB and 1321SB) with type approved Low Smoke, Zero Halogen properties for use in demanding marine applications.

ABS (the American Bureau of Shipping) is the leading international classification society devoted to promoting the security of marine-related life and property. With ABS-type approval, no additional special approvals or insurance company exceptions are required for cable system installations.

Industrial 2-hour Rated CI Cables

Type PLTC-CI shielded multi-conductor cables are for industrial use, to be employed in controlled shutdown or emergency situations in circuitry that pertains to mission-critical industrial processes.

Part Nos. 5240FR and 5201FR are for installation in risers or Power Limited Trays, but cannot be used in conduit if UL listing must be retained. These cables are UL2196/NEC listed to suit the requirements of particularly hazardous environments such as petrochemical facilities.

Cable Installation	Code Compliance Requirements	Cable Solution	Installation Guidelines	Cable Rating, listings, and Special Considerations
In conduit, 1/2" EMT Minimum ¹	NFPA 101 Life Safety Code NFPA 72/2002	Safe-T-Line CIC ² Types (UZ and FZ part numbers suffix)	UL Electrical Circuit Protective Systems – System No. 30 (FHIT.30) — and NFPA 70 (NEC)	R22303 (UL) and FPLR, 105°C. Not 2-hour rated by itself in standard risers unless in conduit and installed according to UL FHIT.30
Not in conduit, Not in plenum, May be in standard riser	NFPA 101 Life Safety Code NFPA 72/2002	Safe-T-Line CI Types (UM and FM part numbers suffix)	NFPA 70 (NEC) standard building practices Circuit Protective Systems (UL, NEC) 41 V devices	FPLR-CI, 105°C. Not listed by UL for 2-hours when installed in conduit. Not for use in plenum spaces. 2-hour rated in standard risers, non conduit routings; 41 V devices
NFPA 70 Article 725; PLTC-CI, ITC, UL 2196 Not in conduit	NFPA 70/2005 Article 725.61(H) and 725.82(F) NFPA 101 as applicable	Safe-T-Line PLTC-CI Cable (FR part number suffix) - or special production of other types	Per plant engineering or per NFPA 70 (NEC) standard building practices and NFPA 101 Life Safety Code as applicable.	UL 2196, FPLR-CI, 105°C, PLTC, ITC, Sunlight Resistant. NEC 760, UL 1666, IEC 603331. Not listed by UL for 2 hours when installed in conduit
Where ABS Type Approval is preferred. Aboard ship.	Shipboard safety, LSZH, ABS Type Approval. Ship designers and architects, licensed PE	1320SB 1321SB	Per Ship Designers or NFPA 70 (NEC) standard building practices and NFPA 101 Life Safety Code, as applicable	ABS Type Approved. CMG-LS, FPRL-CI, NEC 760, IEEE Std. 45, clause 23, IEC 60092-376 clause 17, 60092-351, 60754-1, 60754-2, 61034, UL1685 FT4 loading, limited smoke

¹In UL Listed Flexible Metallic Conduit not exceeding 6 feet in length also permitted per FHIT No. 30 (all other conditions thereof still apply).

²Continuous lengths of cable and coupled conduit passing completely through a fire zone and terminating a minimum of 12 inches beyond the fire rated wall or floor bounding the fire zone (FHIT.30).

Safe-T-Line® Cable

Circuit Integrity in Conduit (CIC) Fire Alarm

Flame Retardant, Low Smoke Zero Halogen Jacket, Riser-Rated; R22303; FPLR

Description	Part No.	No. of Cond.	Stranding	Standard Lengths		Standard Unit Weight		Insulation Thickness		Nominal OD		Nominal Capacitance		Nominal DC Resistance Ω/Mft.
				ft.	m	Lbs.	kg	Inch	mm	Inch	mm	pF/ft.	pF/m	

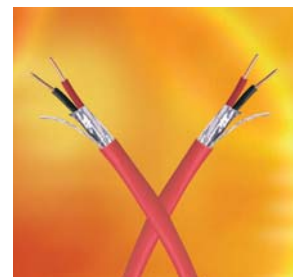
Unshielded Multi-conductor • Thermoset Elastomer Insulation • Red Polyolefin Jacket

NEC: FPLR UL R22303 UL-Standard 2196 in Conduit 		18 AWG													
		5320UZ	2	solid	1000	304.8	57	25.90	.041	1.0	.36	9.14	15	49	5.9
		16 AWG													
		5220UZ	2	solid	1000	304.8	57	25.85	.035	.89	.35	8.89	15	49	4.1
		5200UZ	2	7 x 24	1000	304.8	61	27.67	.035	.89	.37	9.40	16	52	4.1
		14 AWG													
		5120UZ	2	solid	1000	304.8	71	32.21	.035	.89	.38	9.65	17	56	2.5
		5100UZ	2	7 x 22	1000	304.8	78	35.38	.035	.89	.40	10.16	18	59	2.5
		12 AWG													
		5020UZ	2	solid	1000	304.8	93	42.18	.035	.89	.42	10.67	19	62	1.6
		5000UZ	2	7 x 20	1000	304.8	99	44.91	.035	.89	.44	11.18	19	62	1.6

Shielded Multi-conductor • Thermoset Elastomer Insulation • Beldfoil® Shield • Red Polyolefin Jacket

NEC: FPLR UL R22303 UL-Standard 2196 in Conduit 		18 AWG													
		5320FZ	2	solid	1000	304.8	59	26.80	.041	1.0	.36	9.22	20	66	5.9
		16 AWG													
		5220FZ	2	solid	1000	304.8	63	28.58	.035	.89	.36	9.14	20	66	4.1
		5222FZ	4	solid	1000	304.8	102	46.27	.035	.89	.41	10.41	16	52	4.1
		5200FZ	2	7 x 24	1000	304.8	67	30.39	.035	.89	.37	9.40	22	72	4.1
		14 AWG													
		5120FZ	2	solid	1000	304.8	81	36.74	.035	.89	.38	9.65	23	75	2.5
		5122FZ	4	solid	1000	304.8	133	60.33	.035	.89	.44	11.18	18	59	2.5
		5100FZ	2	7 x 22	1000	304.8	88	39.92	.035	.89	.41	10.41	26	85	2.5
		12 AWG													
		5020FZ	2	solid	1000	304.8	108	48.99	.035	.89	.42	10.67	27	89	1.6
		5022FZ	4	solid	1000	304.8	180	81.65	.035	.89	.48	12.19	20	66	1.6
		5000FZ	2	7 x 20	1000	304.8	114	51.71	.035	.89	.44	11.18	27	89	1.6

Notes: All 2-conductor versions are color-coded black and red; 4 or more conductor versions are all black and numbered.
Available through 8 conductor by special order.



Safe-T-Line® Cable

Circuit Integrity (CI) Fire Alarm

Flame Retardant, Low Smoke, Zero Halogen Jacket, Riser-Rated; FPLR-CI

Description	Part No.	No. of Cond.	Stranding	Standard Lengths		Standard Unit Weight		Insulation Thickness		Nominal OD		Nominal Capacitance		Nominal DC Resistance Ω/Mft.
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	pF/Ft.	pF/m	

Unshielded Multi-conductor • Thermoset Elastomer Insulation • Red Polyolefin Jacket

18 AWG														
NEC: FPLR-CI UL Standard 2196 X-conduit 	5320UM	2	solid	1000	304.8	40	18.14	.034	.86	.31	7.87	17	56	5.9
	5322UM	4	solid	1000	304.8	65	29.48	.034	.86	.35	8.89	17	56	5.9
	5324UM	6	solid	1000	304.8	95	43.09	.034	.86	.42	10.67	17	56	5.9
	5326UM	8	solid	1000	304.8	120	54.43	.034	.86	.45	11.43	17	56	5.9
16 AWG														
	5220UM	2	solid	1000	304.8	49	22.23	.034	.86	.33	8.38	19	62	4.0
	5222UM	4	solid	1000	304.8	81	36.74	.034	.86	.38	9.65	19	62	4.0
14 AWG														
	5120UM	2	solid	1000	304.8	71	32.21	.034	.86	.36	9.14	21	69	2.5
	5122UM	4	solid	1000	304.8	121	54.88	.034	.86	.41	10.41	21	69	2.5
12 AWG														
	5020UM	2	solid	1000	304.8	100	45.36	.034	.86	.39	9.91	23	75	1.6
	5022UM	4	solid	1000	304.8	168	76.20	.034	.86	.45	11.43	23	75	1.6

41 V devices

Shielded Multi-conductor • Thermoset Elastomer Insulation • Beldfoil® Shield • Red Polyolefin Jacket

18 AWG														
NEC: FPLR-CI UL Standard 2196 X-conduit 	5320FM	2	solid	1000	304.8	45	20.41	.034	.86	.31	7.87	27	89	6.5
	5322FM	4	solid	1000	304.8	70	31.75	.034	.86	.35	8.89	27	89	6.5
	5324FM	6	solid	1000	304.8	100	45.36	.034	.86	.42	10.67	27	89	6.5
	5326FM	8	solid	1000	304.8	125	56.70	.034	.86	.45	11.43	27	89	6.5
NEC: FPLR-CI UL Standard 2196 X-conduit 	5300FM	2	7 x 26	1000	304.8	47	21.32	.034	.86	.32	8.13	27	89	6.6
	5302FM	4	7 x 26	1000	304.8	72	32.66	.034	.86	.36	9.14	27	89	6.6
	5304FM	6	7 x 26	1000	304.8	104	47.17	.034	.86	.44	11.18	27	89	6.6
	5306FM	8	7 x 26	1000	304.8	130	58.97	.034	.86	.48	12.19	27	89	6.6
16 AWG														
NEC: FPLR-CI UL Standard 2196 X-conduit 	5220FM	2	solid	1000	304.8	55	24.95	.034	.86	.33	8.38	31	102	4.0
	5222FM	4	solid	1000	304.8	88	39.92	.034	.86	.38	9.65	31	102	4.0
NEC: FPLR-CI UL Standard 2196 X-conduit 	5200FM	2	7 x 24	1000	304.8	58	26.31	.034	.86	.35	8.89	31	102	4.0
	5202FM	4	7 x 24	1000	304.8	93	42.18	.034	.86	.40	10.16	31	102	4.0
14 AWG														
NEC: FPLR-CI UL Standard 2196 X-conduit 	5120FM	2	solid	1000	304.8	81	36.74	.034	.86	.36	9.14	33	108	2.5
	5122FM	4	solid	1000	304.8	131	59.42	.034	.86	.41	10.41	33	108	2.5
NEC: FPLR-CI UL Standard 2196 X-conduit 	5100FM	2	7 x 22	1000	304.8	83	37.65	.034	.86	.38	9.65	33	108	2.6
	5102FM	4	7 x 22	1000	304.8	133	60.33	.034	.86	.44	11.18	33	108	2.6

Note: Available through 8 conductor by special order.

Safe-T-Line® Cable**Circuit Integrity (CI) Fire Alarm**

Flame Retardant, Low Smoke Zero Halogen Jacket, Riser-Rated; FPLR-CI

Description	Part No.	No. of Cond.	Stranding	Standard Lengths		Standard Unit Weight		Insulation Thickness		Nominal OD		Nominal Capacitance		Nominal DC Resistance Ω/Mft.
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	pF/Ft.	pF/m	

Shielded Multi-conductor • Thermoset Elastomer Insulation • Beldfoil® Shield • Red Polyolefin Jacket

12 AWG														
NEC: FPLR-CI UL Standard 2196 X-conduit 	5020FM	2	solid	1000	304.8	114	51.71	.034	.86	.39	9.91	37	121	1.6
	5022FM	4	solid	1000	304.8	182	82.55	.034	.86	.45	11.43	37	121	1.6
NEC: FPLR-CI UL Standard 2196 X-conduit 	5000FM	2	7 x 20	1000	304.8	116	52.62	.034	.86	.42	10.67	40	131	1.6
	5002FM	4	7 x 20	1000	304.8	185	83.91	.034	.86	.48	12.19	40	131	1.6

FPLR-CI cables available with SUN-RES and PLTC-CI rating by special order.

PLTC-CI 2-hour Fire Rated/Industrial Control Shutdown Cable

Flame Retardant, Low Smoke Zero Halogen Jacket, Riser-Rated

Description	Part No.	No. of Cond.	Stranding	Standard Lengths		Standard Unit Weight		Insulation Thickness		Nominal OD		Nominal Capacitance		Nominal DC Resistance Ω/Mft.
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	pF/Ft.	pF/m	

Shielded Multi-conductor • Thermoset Elastomer Insulation • Beldfoil® Shield • Sunlight Resistant • Red Polyolefin Jacket

16 AWG														
NEC: PLTC, ITC, FPLR-CI UL Standard 2196 X-conduit 	5240FR	2	7 x 24	500	152.4	55	24.95	.034	.86	.35	8.38	31	102	4.0
				2500	762.0	185	84.00	.034	.86	.35	8.89	31	102	4.0
	5201FR	3	7 x 24	500	152.4	88	39.92	.034	.86	.37	9.65	31	102	4.0
				2500	762.0	230	105.00	.034	.86	.37	9.40	31	102	4.0

ABS Type Approved 2-hour Fire Rated Shipboard Cable

Flame Retardant, Low Smoke Zero Halogen Jacket; FPLR-CI, CMG-LS, FT4, IEC

Description	Part No.	No. of Cond.	Stranding	Standard Lengths		Standard Unit Weight		Insulation Thickness		Nominal OD		Nominal Capacitance		Nominal DC Resistance Ω/Mft.
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	pF/Ft.	pF/m	

Shielded Multi-conductor • Thermoset Elastomer Insulation • Beldfoil® Shield • Sunlight Resistant • Red Polyolefin Jacket PLTC Rated

18 AWG Solid Bare Copper														
NEC: FPLR-CI UL Standard 2196 X-conduit 	1320SB	1	18/2	1000	304.8	46	20.9	.034	.86	.314	7.98	28	91.9	6.6

ABS Model Certificate No. 06-HS184641F-PDA

16 AWG Solid Bare Copper														
NEC: FPLR-CI UL Standard 2196 X-conduit 	1321SB	1	16/2	1000	304.8	55	24.95	.034	.86	.33	8.38	31	102	4.0

ABS Model Certificate No. 06-HS184641F-PDA

* Capacitance between conductors.

For other ABS Type Approved LSZH cables, see NP236.