



HELIAX® Coaxial Cables



FSJ4-50B

Cable Ordering Information

Description	Type No.
Standard Superflexible Cable	
1/2" Standard Cable, Standard Jacket	FSJ4-50B
Fire Retardant Cables	
1/2" Fire Retardant Jacket (CATVX)	FSJ4RN-50B
1/2" Fire Retardant Jacket (CATVR)	FSJ4RN-50B
Low VSWR and Specialized Cables	
1/2" Low VSWR, specify operating band	FSJ4P-50B-(**)
Phase Stabilized and Phase Measured Cable	See page 585
Jumper Cable Assemblies	
Standard Jumper Assemblies	See page 545
Low VSWR Jumper Assemblies for Cellular	See page 46

** Insert suffix number from "Low VSWR Specifications" table.

Characteristics

Electrical	
Impedance, ohms	50 ± 1
Maximum Frequency, GHz	10.2
Velocity, percent	81
Peak Power Rating, kW	15.6
dc Resistance, ohms/1000 ft (1000 m)	
Inner	0.82 (2.69)
Outer	1.00 (3.28)
dc Breakdown, volts	2500
Jacket Spark, volts RMS	5000
Capacitance, pF/ft (m)	25.2 (82.7)
Inductance, µH/ft (m)	0.0625 (0.205)
Mechanical	
Outer Conductor	Copper
Inner Conductor	Copper-Clad Aluminum
Diameter over Jacket, standard jacket, in (mm)	0.52 (13.2)
Diameter over Jacket, fire-retardant jacket, in (mm)	0.53 (13.5)
Diameter over Copper Outer Conductor, in (mm)	0.48 (12.2)
Diameter Inner Conductor, in (mm)	0.142 (3.6)
Minimum Bending Radius, in (mm)	1.25 (32)
Number of Bends, minimum (typical)	20 (50)
Bending Moment, lb-ft (N•m)	2.0 (2.7)
Cable Weight, lb/ft. (kg/m)	0.14 (0.21)
Tensile Strength, lb (kg)	175 (80)
Flat Plate Crush Strength, lb/in (kg/mm)	110 (1.9)

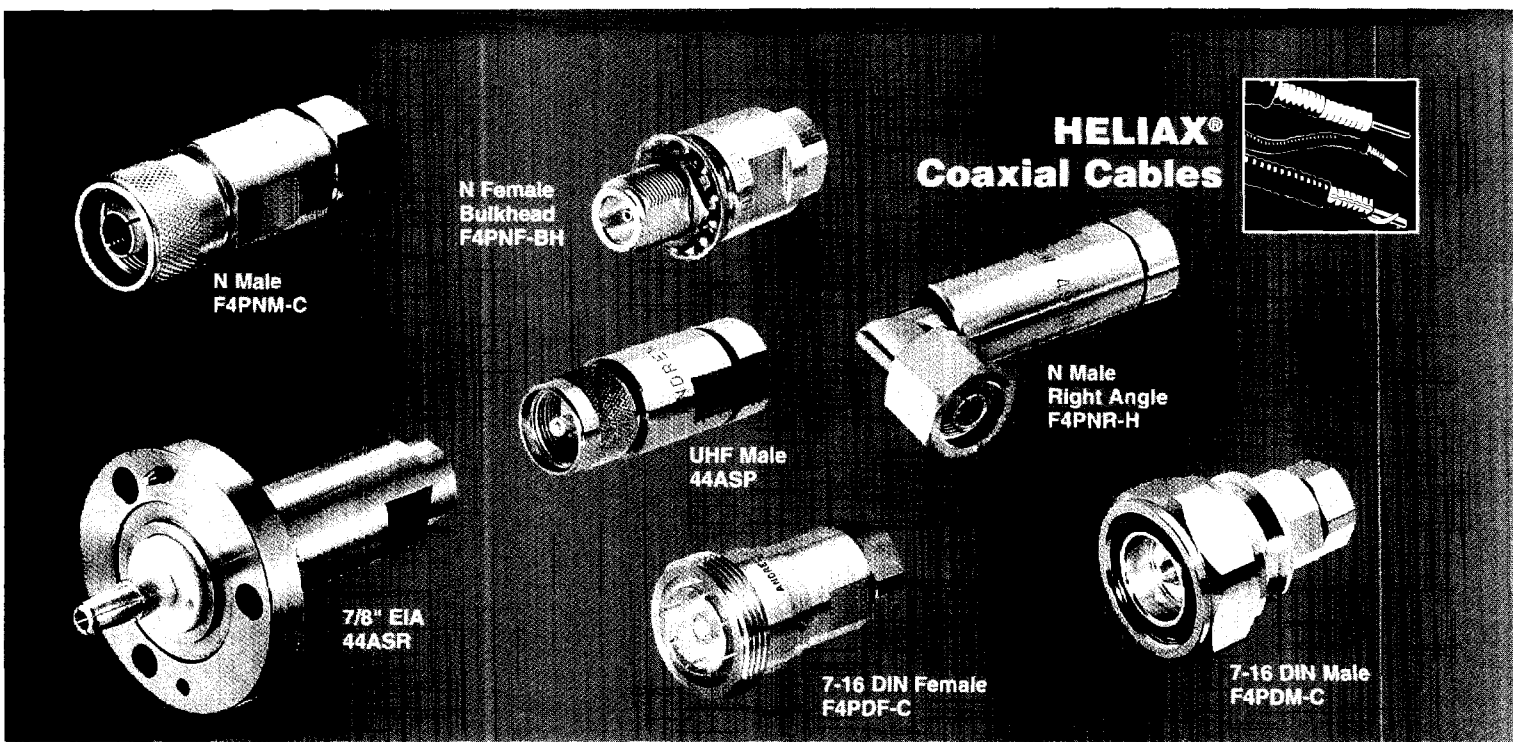
Attenuation and Average Power

Frequency MHz	Attenuation dB/100 ft	Attenuation dB/100m	Average Power kW
0.5	0.071	0.234	15.6
1	0.101	0.331	15.6
1.5	0.124	0.406	15.6
2	0.143	0.469	15.6
10	0.321	1.05	10.0
20	0.456	1.50	7.07
30	0.561	1.84	5.75
50	0.730	2.39	4.42
88	0.979	3.21	3.30
100	1.05	3.44	3.08
108	1.09	3.58	2.96
150	1.29	4.23	2.49
174	1.39	4.57	2.30
200	1.50	4.92	2.14
300	1.87	6.12	1.72
400	2.18	7.14	1.48
450	2.32	7.61	1.38
500	2.46	8.06	1.31
512	2.49	8.17	1.29
600	2.73	8.95	1.18
700	2.97	9.74	1.09
800	3.20	10.5	1.01
824	3.25	10.7	0.991
894	3.40	11.2	0.947
960	3.55	11.6	0.910
1000	3.63	11.9	0.889
1250	4.12	13.5	0.783
1500	4.57	15.0	0.705
1700	4.92	16.1	0.656
2000	5.41	17.7	0.597
2300	5.87	19.3	0.549
3000	6.88	22.6	0.469
4000	8.20	26.9	0.394
5000	9.41	30.9	0.343
6000	10.6	34.8	0.306
8000	12.7	41.7	0.254
10000	14.7	48.2	0.220
10200	14.9	48.9	0.217

Standard Conditions:

For Attenuation, VSWR 1.0 ambient temperature 24°C (75° F).

For Average Power, VSWR 1.0, ambient temperature 40°C (104°F), inner conductor temperature 100°C (212° F), no solar loading.



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Connectors

Interface	Description	Type Number	Previous Type Number	Inner Contact Attachment	Outer Contact Attachment	Plating Code	Max. Length in (mm)	Max. Dia. in (mm)
N Male		F4NM†	44ASW	Solder	Self-Flare	BS	2.1 (53.3)	0.88 (22.4)
N Male		F4NM-C†		Captivated	Self-Flare	BS	2.1 (53.3)	0.88 (22.4)
N Male	Hex Head	F4NM-H		Solder	Self-Flare	BS	2.1 (53.3)	0.91 (23.1)
N Male	Hex Head	F4NM-HC		Captivated	Self-Flare	BS	2.1 (53.3)	0.91 (23.1)
N Male		F4PNM	44SEW	Solder	Self-Flare	SG	2.1 (53.3)	0.88 (22.4)
N Male		F4PNM-C†		Captivated	Self-Flare	SG	2.1 (53.3)	0.88 (22.4)
N Male	Hex Head	F4PNM-H†	44SEW-12	Solder	Self-Flare	SG	2.1 (53.3)	0.91 (23.1)
N Male	Hex Head	F4PNM-HC		Captivated	Self-Flare	SG	2.1 (53.3)	0.92 (23.4)
N Male	Right Angle	F4PNR†	49593	Solder	Tab-Flare	SG	3.3/1.5 (84/38)	0.86 (21.8)
N Male	Rt Angle, Hex Hd	F4PNR-H	49588	Solder	Tab-Flare	SG	3.3/1.5 (84/38)	0.86 (21.8)
N Female		F4NF†	44ASN	Solder	Self-Flare	BS	2.3 (53.3)	0.88 (22.4)
N Female		F4NF-C		Captivated	Self-Flare	BS	2.3 (53.3)	0.88 (22.4)
N Female		F4PNF†	44SPN	Solder	Self-Flare	SG	2.3 (53.3)	0.88 (22.4)
N Female		F4PNF-C		Captivated	Self-Flare	SG	2.3 (53.3)	0.88 (22.4)
N Female	Bulkhead	F4PNF-BH	44BSPN-BH	Solder	Self-Flare	SG	2.3 (58)	0.95 (24.1)
4.1/9.5 DIN Male	Indoor Use	F4PKM-IC	44KM	Captivated	Self-Flare	SS	2.0 (50)	0.95 (24.1)
4.1/9.5 DIN Male	Outdoor Use	F4PKM-C	44KME	Captivated	Self-Flare	SS	2.0 (50)	0.95 (24.1)
4.1/9.5 DIN Male	Rt Angle, Indoor use	F4PKR-IC	44KM-RA	Captivated	Self-Flare	SS	2.3/1.5 (57/38)	0.95 (24.1)
4.1/9.5 DIN Male	Rt Angle, Outdoor Use	F4PKR-C	44KME-RA	Captivated	Self-Flare	SS	2.3/1.5 (57/38)	0.95 (24.1)
7-16 DIN Male		F4PDM-C†	44SDM	Captivated	Self-Flare	SS	2.0 (50)	1.4 (35.6)
7-16 DIN Male		F4PDM†	44ASDM	Captivated	Self-Flare	SS	2.0 (50)	1.4 (35.6)
7-16 DIN Male	Right Angle	F4PDR		Solder	Self-Flare	SS	2.4.1.8 (61/46)	1.4 (35.6)
7-16 DIN Male	Right Angle	F4PDR-C	44SDM-RA	Captivated	Self-Flare	SS	2.1/2.0 (53/50)	1.4 (35.6)
7-16 DIN Female		F4PDF-C	44SDF	Captivated	Self-Flare	SS	2.0 (50)	1.1 (27.9)
7-16 DIN Female		F4PDF	44ASDF	Solder	Self-Flare	SS	2.0 (50)	1.1 (27.9)
7-16 DIN Female	Bulkhead	F4PDF-BH		Solder	Self-Flare	SS	2.01 (51.1)	1.50 (38)
7-16 DIN Female	Panel Mount	F4PDF-PM		Solder	Self-Flare	SS	2.01 (51.1)	1.26 (32)
7-16 DIN Female	Bulkhead	F4PDF-BHC		Captivated	Self-Flare	SS	2.0 (50)	1.8 (45.7)
7-16 DIN Female	Panel Mount	F4PDF-PMC		Captivated	Self-Flare	SS	2.0 (50)	1.3 (33)
7/8" EIA Flange		44ASR		Solder	Tab Flare	BS	3.3 (84)	1.4 (35.6)
UHF Male		44ASP		Solder	Tab Flare	BS	2.1 (53)	0.84 (21.3)
UHF Female		44ASU		Solder	Tab Flare	BS	2.3 (58)	0.84 (21.3)
HN Male		44ASJ		Solder	Tab Flare	BS	2.4 (61)	0.84 (21.3)
SC Male		44SPCW		Solder	Tab Flare	SG	2.7 (69)	0.88 (22.4)

† See page 570 for bulk packs.

Plating Codes: BB - Brass Body and Pin, BS - Brass Body and Silver Plated Pin, SG - Silver Plated Body and Gold Plated Pin, SS - Silver Plated Body and Pin

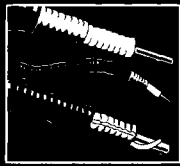
Connector Accessories

	Type Number
Connector Pin-Paks, five replacement pins For F4NM, F4NM-H	241455-3
For F4PNM, F4PNM-H	241455-4
For F4PDM	14417-2
Connector Reattachment Kit	34767A-39
Bulkhead Adapter, for N or UHF Females	26016-2

Assemblies

For complete information on assemblies, see page 545

	Lengths feet	Type Number
N Male/N Male	3, 6, 8 or variable	F4-NMNM-(*†)
N Male/N Male, premium	3, 6, 8 or variable	F4-PNMNM-(*†)
7-16 DIN Male/7-16 DIN Male	3, 6, 8 or variable	F4-PDMDM-(*†)
N Male, premium/7-16 DIN Male	3, 6, 8 or variable	F4-PNMMDM-(*†)



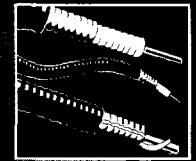
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Low VSWR Specifications, Type FSJ4P-50B-()

Frequency Band, GHz	Type No.	Using Connector Type**	Assembly VSWR, Maximum (R.L., dB)			
			0-10 ft (0-3 m)	10-20 ft (3-6 m)	20-100 ft 6-30 m)	Above 100 ft (Above 30 m)
0.01-2.3*	FSJ4P-50B-1	N Males: F4NM, F4PNM	1.10 (26.4)	1.10 (26.4)	1.15 (23.1)	1.15 (23.1)
		N Females: F4NF, F4PNF	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Male: F4PDM-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Female: F4PDF-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		Rt. Angle N Male: F4PNR	1.15 (23.1)	1.18 (21.6)	1.30 (17.7)	1.50 (14.0)
0.01-4.2*	FSJ4P-50B-2	N Males: F4NM, F4PNM	1.20 (20.8)	1.20 (20.8)	1.20 (20.8)	1.20 (20.8)
		N Females: F4NF, F4PNF	1.25 (19.1)	1.25 (19.1)	1.25 (19.1)	1.30 (17.7)
		7-16 DIN Male: F4PDM-C	1.25 (19.1)	1.25 (19.1)	1.25 (19.1)	1.30 (17.7)
		7-16 DIN Female: F4PDF-C	1.25 (19.1)	1.25 (19.1)	1.25 (19.1)	1.30 (17.7)
		Rt. Angle N Male: F4PNR	1.35 (16.5)	1.35 (16.5)	1.35 (16.5)	1.50 (14.0)
0.01-7.1*	FSJ4P-50B-3	N Males: F4NM, F4PNM	1.35 (16.5)	1.35 (16.5)	1.35 (16.5)	1.35 (16.5)
		N Females: F4NF, F4PNF	1.35 (16.5)	1.35 (16.5)	1.40 (15.6)	1.50 (14.0)
		7-16 DIN Male: F4PDM-C	1.35 (16.5)	1.35 (16.5)	1.40 (15.6)	1.50 (14.0)
		7-16 DIN Female: F4PDF-C	1.35 (16.5)	1.35 (16.5)	1.40 (15.6)	1.50 (14.0)
0.8-0.96	FSJ4P-50B-4	N Males: F4NM, F4PNM	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.15 (23.1)
		N Females: F4NF, F4PNF	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.15 (23.1)
		7-16 DIN Male: F4PDM-C	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.15 (23.1)
		7-16 DIN Female: F4PDF-C	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.15 (23.1)
		Rt. Angle N Male: F4PNR	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)
0.87-0.96 and 1.7-1.9	FSJ4P-50B-23	7-16 DIN Male: F4PDM, F4PDM-C	1.10 (26.4)	1.15 (23.1)	1.18 (21.6)	1.20 (20.8)
		7-16 DIN Female: F4PDF, F4PDF-C	1.10 (26.4)	1.10 (26.4)	1.15 (23.1)	1.20 (20.8)
1.7-1.9	FSJ4P-50B-12	N Males: F4NM, F4PNM	1.08 (28.3)	1.08 (28.3)	1.15 (23.1)	1.15 (23.1)
		N Females: F4NF, F4PNF	1.08 (28.3)	1.08 (28.3)	1.15 (23.1)	1.15 (23.1)
		7-16 DIN Male: F4PDM-C	1.08 (28.3)	1.08 (28.3)	1.15 (23.1)	1.15 (23.1)
		7-16 DIN Female: F4PDF-C	1.08 (28.3)	1.08 (28.3)	1.15 (23.1)	1.15 (23.1)
		Rt. Angle N Male: F4PNR	1.10 (26.4)	1.12 (24.9)	1.20 (20.8)	1.20 (20.8)
1.7-2.3	FSJ4P-50B-16	N Males: F4NM, F4PNM	1.10 (26.4)	1.10 (26.4)	1.15 (23.1)	1.20 (20.8)
		N Females: F4NF, F4PNF	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Male: F4PDM-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Female: F4PDF-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		Rt. Angle N Male: F4PNR	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
0.87-0.96	FSJ4P-50B-5	N Males: F4NM, F4PNM	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.10 (26.4)
		N Females: F4NF, F4PNF	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.10 (26.4)
		7-16 DIN Male: F4PDM-C	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.10 (26.4)
		7-16 DIN Female: F4PDF-C	1.06 (30.7)	1.06 (30.7)	1.08 (28.3)	1.10 (26.4)
		Rt. Angle N Male: F4PNR	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)
0.3-1.7	FSJ4P-50B-6	N Males: F4NM, F4PNM	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		N Females: F4NF, F4PNF	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Male: F4PDM-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Female: F4PDF-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		Rt. Angle N Male: F4PNR	1.20 (20.8)	1.20 (20.8)	1.30 (17.7)	1.40 (15.6)
1.7-2.7	FSJ4P-50B-7	N Males: F4NM, F4PNM	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		N Females: F4NF, F4PNF	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Male: F4PDM-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		7-16 DIN Female: F4PDF-C	1.15 (23.1)	1.15 (23.1)	1.15 (23.1)	1.20 (20.8)
		Rt. Angle N Male: F4PNR	1.20 (20.8)	1.20 (20.8)	1.20 (20.8)	1.20 (20.8)
4.0-8.0*	FSJ4P-50B-8	N Males: F4NM, F4PNM	1.35 (16.5)	1.35 (16.5)	1.35 (16.5)	1.40 (15.6)
		N Females: F4NF, F4PNF	1.50 (14.0)	1.50 (14.0)	1.50 (14.0)	1.40 (15.6)
		7-16 DIN Male: F4PDM-C	1.50 (14.0)	1.50 (14.0)	1.50 (14.0)	1.40 (15.6)
		7-16 DIN Female: F4PDF-C	1.50 (14.0)	1.50 (14.0)	1.50 (14.0)	1.40 (15.6)

* Specify operating band. ** Connectors ordered separately.

VSWR values are guaranteed for factory fit assemblies and are typical for field cut lengths. If two different connector interfaces are selected, the higher VSWR value is guaranteed.



Accessories – Photos and descriptions on pages 544-572.

Description	Type No.	Description	Type No.
Hangers and Adapters - for more hangers and adapters see pages 547-557.		Crimping Tool to field attach lug to Grounding Kit	207270
Standard Hangers and Adapters Standard Hanger Kit of 10. <i>Standard tower configuration spacing is 3-4 feet (1-1.2 m).</i> Recommended maximum spacing for outdoor installation is 2.5 ft (0.76 m) at 125 mph (200 km/h) wind, 1/2" (13 mm) radial ice. For different wind and ice loading spacing recommendations, refer to Cable Hanger Spacing, page 547.	43211A	Arrestor Plus® Lightning Surge Protector Connector/surge protector. #, * <i>Interface and frequency band information.</i> <i>See page 562 for details and more interface types.</i>	APPF4-#*
Hardware Kit of 10, 3/8" bolts, lock washers, nuts 3/4" (19 mm) long 1" (25) mm long	31769-5 31769-1	Arrestor Plus® T-Series Lightning Surge Protector Connectors on each end (universal version). Non-directional #, * <i>Interface and frequency band information.</i> <i>See page 563 for details.</i>	APT-#*
Angle Adapter , kit of 10. Stainless Steel Galvanized Galvanized, metric hardware	31768A 242774 242774-M	Gas Tube Surge Arrestor Connectors on each end (universal version). Directional, dc pass capability #, * <i>Interface and frequency band information.</i> <i>See page 564 for details.</i>	SA-#*
Round Member Adapter Kit of 10. Member Diameter, in (mm)		Weatherproofing - for more information, see page 565.	
1-2 (25-50)	31670-1	Cold-Shrink Weatherproofing Kit	
2-3 (50-75)	31670-2	1/2" Coax-Type N to 1/2" Coax-Type N	241474-4
3-4 (75-100)	31670-3	7/8" Coax-Type N to 1/2" Coax-Type N	241475-1
4-5 (100-125)	31670-4	1-1/4" or 1-5/8" Coax-Type N to 1/2" Coax-Type N	241475-2
5-6 (125-150)	31670-5	7/8" Coax-7-16 DIN to 1/2" FSJ4 -7-16 DIN	241475-6
6-8 (150-200)	31670-6	1-1/4" or 1-5/8" Coax-7-16 DIN to FSJ4 -7-16 DIN	241475-7
Snap-In Hangers and Adapters Snap-In Hanger Kit of 10. For pre-punched 3/4 in (19 mm) holes on tower members or adapters below. <i>Standard tower configuration spacing is 3-4 feet (1-1.2 m).</i> Recommended maximum spacing for outdoor installation is 1.5 ft (0.46 m) at 125 mph (200 km/h) wind, 1/2" (13 mm) radial ice. For different wind and ice loading spacing recommendations, refer to Cable Hanger Spacing, page 547	206706-1	1/2" Coax -Type N to Antenna Output	241548-4
Tower Hanger/Adapter , attaches to existing angle tower members		1/2" FSJ4 -7-16 DIN to Antenna Output	241548-7
1 cable run, 1 connection required	206929-1	Connector/Splice Weatherproofing Kit	221213
4 cable runs, 2 connections required	206929-4	Entry Systems - for more information, see pages 566-567.	
8 cable runs, 3 connections required	206929-8	Wall/Roof Feed-Thru	40656A-3
J-Bolt Hardware Kit of 10 for use with Tower/Hanger Adapter	206930	Feed-Thru Plates and Boots. order separately, see pages 566-567.	
Nylon Cable Tie Kit of 50. Recommended maximum spacing for outdoor installations is 1.5 ft (0.5 m)	40417	Plates	
Nylon Cable Tie Kit in Plastic Box. 100 each, 4, 5.5, and 7.5 inch (101, 140, and 190 mm) ties. Recommended maximum spacing for outdoor installations is 1.5 ft (0.5 m)	CT-K350	Openings	
Velcro Cable Ties. Black, 8 inch. For indoor use only		1	204673-1
Kit of 10	VCT8-10	1	204673-2
Kit of 50	VCT8-50	2	
Hanger Blox and Insulated Hangers - please refer to pages 554-557.		3	
Hoisting Grip	43094	4	204673-4
Grounding and Surge Protection - for more information, see pages 559-564.		6	
Grounding Kit		8	204673-8
factory attached, one-hole lug, 24 in (610 mm) lead	204989-1	12	204673-12
factory attached, two-hole lug, 24 in (610 mm) lead	241088-1		
field attachable crimp-on, one-hole lug, 36 in (915 mm) lead	204989-21	4 in Boots	
field attachable crimp-on, two-hole lug, 36 in (915 mm) lead	241088-6	5 in Boots	
		One Hole:	204679-5
		Three Hole:	204679-7
		ArrestorPort Plus™. Wall entry plate and integrated ground bar assembly. Use with Arrestor Plus surge protector series. Available in many configurations see page 562 for available options and ordering information. * <i>Number of surge arrestor openings in the plate.</i> ** <i>Number of cable feed thru ports at the top.</i>	APPORT-#-#**
		Tools - for more tools see page 569.	
		EASIAIX® Cutting Tool , FSJ4/FSJ1	207865
		EASIAIX Cutting Tool , FSJ4/FSJ2	241372
		Cutoff Guide , 7/32" (5.5 mm)	224361
		Installer Pax™. Bulk packs are available for some hangers, adapters, grounding kits and cold shrink weatherproofing kits. See page 570.	