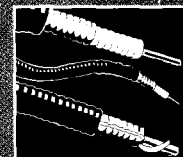


HELIAX[®] Coaxial Cables



HJ7-50A

Cable Ordering Information

Description	Type No.
Standard Cable	
1-5/8" Standard Cable, Standard Jacket	HJ7-50A
Enhanced Power Cable	
1-5/8" Cable with Polyolefin Dielectric for 25% increase in power ratings	27591-101
Fire Retardant Cables	
1-5/8" Fire Retardant Jacket (CATVP)	HJ7RP-50A
1-5/8" Fire Retardant Jacket (CATVR)	HJ7RN-50A
Low VSWR and Specialized Cables	
1-5/8" Low VSWR, specify operating band	HJ7P-50A-(**)
1-5/8" Low VSWR, specify operating band	HJ7SP-50A-(**)
Cable for Cellular, standard jacket	
824-894 MHz, 1.20 VSWR, max.	25816A-31
880-960 MHz, 1.20 VSWR, max.	25816A-32
880-960 MHz, 1.10 VSWR, max.	25816A-33
Cable for Cellular, fire retardant jacket (CATVR)	
824-894 MHz, 1.20 VSWR, max.	41690-79
Broadcast, Low VSWR	
54-216 MHz, 1.05 VSWR, max. over broadcast channel	42140*
470-740 MHz, 1.08 VSWR, max. over broadcast channel	
806-856 MHz, 1.10 VSWR, max. over broadcast channel	

* For broadcast applications, specify channel or frequency.

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

Characteristics

Electrical	
Impedance, ohms	50 ± 0.5
Maximum Frequency, GHz	2.7
Velocity, percent	92.1
Peak Power Rating, kW	305
dc Resistance, ohms/1000 ft (1000 m)	
Inner	0.22 (0.72)
Outer	0.10 (0.33)
dc Breakdown, volts	11000
Jacket Spark, volts RMS	10000
Capacitance, pF/ft (m)	22.1 (72.4)
Inductance, µH/ft (m)	0.055 (0.181)
Mechanical	
Outer Conductor	Copper
Inner Conductor	Copper
Diameter over Jacket, in (mm)	1.98 (50.3)
Diameter over Copper Outer Conductor, in (mm)	1.83 (46.5)
Diameter Inner Conductor, in (mm)	0.713 (18.1)
Nominal Inside Transverse Dimensions (cm)	3.99
Minimum Bending Radius, in (mm)	20 (510)
Number of Bends, minimum (typical)	15 (30)
Bending Moment, lb-ft (N*m)	30 (40.7)
Cable Weight, lb/ft (kg/m)	1.04 (1.55)
Tensile Strength, lb (kg)	750 (340)
Flat Plate Crush Strength, lb/in (kg/mm)	175 (3.1)

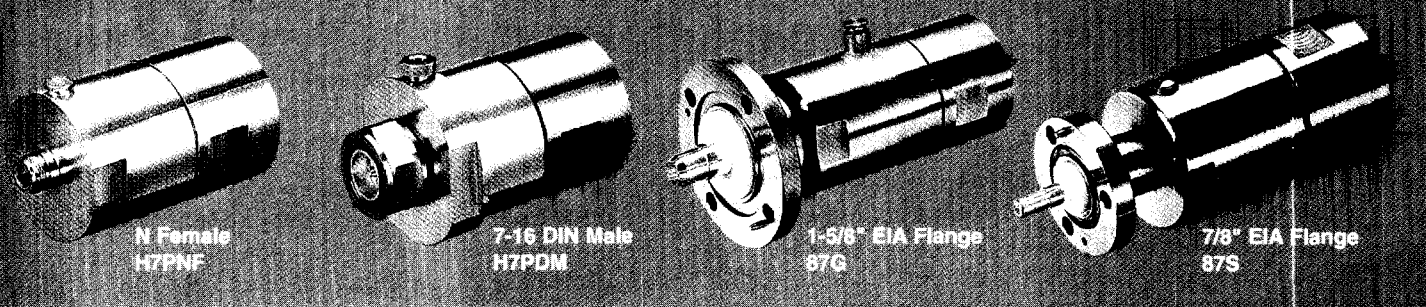
Attenuation and Average Power

Frequency MHz	Attenuation dB/100 ft	Attenuation dB/100m	Average Power kW
0.5	0.0143	0.0469	217
1	0.0200	0.0656	178.2
1.5	0.0244	0.0799	147.2
2	0.0280	0.0919	126.5
10	0.0640	0.210	55.2
20	0.0911	0.299	38.4
30	0.112	0.367	31.0
50	0.145	0.476	23.8
88	0.194	0.636	17.7
100	0.207	0.679	16.5
108	0.215	0.705	15.8
150	0.252	0.827	13.4
174	0.271	0.889	12.4
200	0.290	0.951	11.5
300	0.361	1.18	9.34
400	0.422	1.38	8.06
450	0.451	1.48	7.55
500	0.478	1.57	7.14
512	0.484	1.59	7.04
600	0.528	1.73	6.46
700	0.576	1.89	5.94
800	0.619	2.03	5.54
824	0.629	2.07	5.46
894	0.658	2.16	5.24
960	0.684	2.25	5.05
1000	0.700	2.30	4.94
1250	0.794	2.61	4.35
1500	0.880	2.89	3.91
1700	0.950	3.12	3.64
2000	1.05	3.44	3.33
2300	1.15	3.76	3.01
2700	1.27	4.17	2.69

Standard Conditions:

For Attenuation, VSWR 1.0 ambient temperature 24°C (75°F), atmospheric pressure, dry air.

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



Connectors

Interface	Description	Type Number	Reference*	Inner Contact Attachment	Outer Contact Attachment	Plating Code	Maximum Length in (mm)	Maximum Diameter in (mm)
N Male	Tunable	H7NM-T	87WT	Tab Flare	Tab Flare	BB	11.6 (295)	2.4 (61)
N Female		H7PNF	87PN	Tab Flare	Tab Flare	SG	4.1 (104)	2.4 (61)
N Female	Tunable	H7NF-T	87NT	Tab Flare	Tab Flare	BB	11.4 (290)	2.4 (61)
7-16 DIN Male		H7PDM	87ADM	Tab Flare	Tab Flare	SS	4.2 (107)	2.7 (69)
7-16 DIN Female		H7PDF	-	Tab Flare	Tab Flare	SS	4.2 (107)	2.7 (69)
1-5/8" EIA Flange	Gas Pass†	87R	-	Tab Flare	Tab Flare	BB	4.8 (122)	3.5 (89)
1-5/8" EIA Flange	Gas Block†	87G	-	Tab Flare	Tab Flare	BB	5.7 (145)	3.5 (89)
7/8" EIA Flange	Gas Pass†	87S	-	Tab Flare	Tab Flare	BB	5.6 (142)	2.4 (61)
7/8" EIA Flange	Gas Pass, Tunable†	87ST	-	Tab Flare	Tab Flare	BB	11.8 (300)	2.4 (61)
7/8" EIA Flange	Gas Block†	87SG	-	Tab Flare	Tab Flare	BB	5.6 (142)	2.4 (61)
7/8" EIA Flange	Gas Block, Tunable†	87SGT	-	Tab Flare	Tab Flare	BB	12.2 (310)	2.4 (61)
LC Female		87L	-	Tab Flare	Tab Flare	BB	4.9 (124)	2.4 (61)
End Terminal		87T	-	Tab Flare	Tab Flare	BB	7.0 (178)	2.4 (61)
Splice		87Z	-	Tab Flare	Tab Flare	BB	5.9 (150)	2.4 (61)

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

* Previous Type Number. See page 362 for further information. † Includes inner.

Connector Accessories

	Type Number
Connector Reattachment Kit	
For 87G, 87R	34767A-6
For H7PNF, 87PN, 87S, 87SG	34767A-7
For 87SGT, 87ST	34767A-20
For H7NF-T, H7NM-T, 87NT, 87WT	34767A-19
For 87Z	34767A-13
7/8" EIA Gas Barrier	1260A

Connector Accessories

	Type Number
1-5/8" EIA Gas Barrier	1261B
1-5/8" EIA End Terminal, for strap connection to center conductor, includes inner connector. Use with 87R	2061
1-5/8" Inner Connector, with anchor bead	34660
1-5/8" EIA 90° Miter Elbow, includes one inner connector	1061A

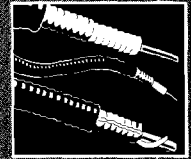
Terrestrial Microwave, Low VSWR Specifications

Frequency Band, GHz	Type No.	Recommended Connectors				VSWR, max. (R.L.)
		No Gas Barrier	7/8" EIA Gas Barrier	7/8" EIA Type N Plug	Type N Jack	
P Series						
1.7-1.9	HJ7P-50A-17L	87ST	87SGT	H7NM-T	H7NF-T	1.15 (23.1)
1.85-1.99	HJ7P-50A-18	87S*	87SG*	H7NM-T	H7NF-T	1.15 (23.1)
2.11-2.2	HJ7P-50A-21	87S*	87SG*	H7NM-T	H7NF-T	1.15 (23.1)
1.7-2.11	HJ7P-50A-17	87ST	87SGT	H7NM-T	H7NF-T	1.15 (23.1)
1.9-2.3	HJ7P-50A-19	87ST	87SGT	H7NM-T	H7NF-T	1.15 (23.1)
2.3-2.7	HJ7P-50A-23W	87ST	87SGT	H7NM-T	H7NF-T	1.15 (23.1)
SP Series						
1.7-1.9	HJ7SP-50A-17L	87ST	87SGT	-	-	1.10 (26.4)
		-	-	H7NM-T	H7NF-T	1.12 (24.8)
1.85-1.99	HJ7SP-50A-18	87ST	87SGT	-	-	1.10 (26.4)
		-	-	H7NM-T	H7NF-T	1.12 (24.8)
2.11-2.2	HJ7SP-50A-21	87ST	87SGT	-	-	1.10 (26.4)
		-	-	H7NM-T	H7NF-T	1.12 (24.8)
1.7-2.11	HJ7SP-50A-17	87ST	87SGT	-	-	1.10 (26.4)
		-	-	H7NM-T	H7NF-T	1.12 (24.8)
1.9-2.3	HJ7SP-50A-19	87ST	87SGT	-	-	1.10 (26.4)
		-	-	H7NM-T	H7NF-T	1.12 (24.8)

* Tunable connector may be used.

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.

HELIAX® Coaxial Cables



Accessories –

Photos and descriptions on pages 544-572.

Description	Type No.
Hangers and Adapters - for more information, see pages 547-557.	
Standard Hangers and Adapters	
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 6 ft (1.83 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.	
	42396A-2
Hardware Kit of 10, 3/8" bolts, lock washers, nuts	
3/4" (19 mm) long	31769-5
1" (25) mm long	31769-1
Angle Adapter , kit of 10.	
Stainless Steel	31768A
Galvanized	242774
Galvanized, metric hardware	242774-M
Round Member Adapter Kit of 10.	
Two kits needed for each hanger kit.	
Stainless steel. Member Diameter, in (mm)	
1-2 (25-50)	31670-1
2-3 (50-75)	31670-2
3-4 (75-100)	31670-3
4-5 (100-125)	31670-4
5-6 (125-150)	31670-5
6-8 (150-200)	31670-6
Threaded Rod Support 3/8" rod, nuts, washers, ceiling bracket	
12 in (305 mm) long, kit of 1	31771
12 in (305 mm) long, kit of 5	31771-4
24 in (610 mm) long, kit of 1	31771-9
24 in (610 mm) long, kit of 5	31771-6
36 in (915 mm) long, kit of 5	31771-10
Tower Standoff Kit of 10. 1 in (25 mm) standoff.	
Member Diameter, in (mm)	
0.75-1.5 (20-40)	30848-5
1.5-3.0 (40-50)	30848-4
3-4 (75-100)	30848-1
4-5 (100-125)	30848-2
5-6 (125-150)	30848-3
Tower Standoff Kit of 10. 2.5 in (60 mm) standoff.	
Member Diameter, in (mm)	
3-4 (75-100)	41108A-1
4-5 (100-125)	41108A-2
5-6 (125-150)	41108A-3
Snap-In Hangers and Adapters	
Snap-In Hanger Kit of 10. For prepunched 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 4 ft (1.22 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.	
	206706-4

Description	Type No.	
Tower Hanger/Adapter , attaches to existing angle tower members		
1 cable run, 1 connection required	206929-1	
4 cable runs, 2 connections required	206929-4	
8 cable runs, 3 connections required	206929-8	
J-Bolt Hardware Kit of 10 for use with Tower/Hanger Tower/Hanger Adapter		
	206930	
Cluster Mount , octagonal, attaches to 1.9 in (48 mm) member		
Kit of one	207030	
Kit of 10	207030-2	
Insulated Hangers and Adapters		
Insulated Hanger , single, for insulated towers. <i>Standard tower configuration spacing is 3-4 feet (1-1.2 m)</i> . Recommended maximum spacing for outdoor installation is 6 ft (1.83 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.		
	33948-3	
Angle Adapter for insulated hanger		
	13555A	
Round Member Adapter for insulated hanger fits member diameters 1-3 in (25-75 mm)		
	13550	
Hoisting Grip		
	24312A	
Grounding - for more information, see pages 559-564.		
Grounding Kit		
factory attached, one-hole lug, 24 in (610 mm) lead	204989-4	
factory attached, two-hole lug, 24 in (610 mm) lead	241088-4	
field attachable crimp-on, one-hole lug, 36 in (915 mm) lead	204989-24	
field attachable crimp-on, two-hole lug, 36 in (915 mm) lead	241088-9	
field attachable screw-on lug, 36 in (915 mm) lead	204989-34	
Crimping Tool to field attach lug to Grounding Kit		
	207270	
Weatherproofing - for more information, see page 565.		
Connector/Splice Weatherproofing Kit		
	221213	
Entry Systems - for more information, see pages 566-567.		
Wall/Roof Feed-Thru		
	40656A-2	
Feed-Thru Plates and Boots . Order separately.		
Openings	Plates For 4 in Boots	Plates For 5 in Boots
1	204673-1	48940-1
1	204673-2	
2		48940-2
3		48940-3
4	204673-4	48940-4
6		48940-6
8	204673-8	
12	204673-12	
	4 in Boots	5 in Boots
One Hole	204679-4	48939-4
Installer Pax™ - Bulk packs are available for some hangers, adapters, and grounding kits. See page 570.		