

HP Cable Series



Emerson Network Power Connectivity Solutions offers the **Semflex** HP test cable assembly series. The HP Series has a long history in the military and aerospace industries as the interconnect cable of choice in ground, sea, and airborne systems. This series also excels in test and measurement applications offering high performance, flexibility, and a wide range of precision connectors for applications up to 50 GHz. The triple shield construction provides connector attachments that exceed *70 lbs of pull off force, (* HP 190 with SMA connector) and harsh handling (i.e. radius torque, continuous flexing, or wide temperature extremes).

Applications

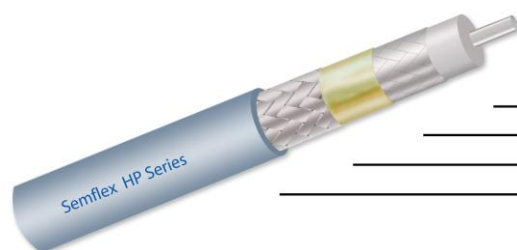
- RF and MW applications requiring interconnects for
- Ground, Sea and airborne systems
- Extreme electrical requirements
- Extreme mechanical conditions
- Precision flexible test leads
- High frequency applications

Cable Construction

- The HP Series uses silver plated copper inner and outer conductors for low attenuation. The microporous PTFE dielectrics and FEP jackets provide consistent performance over temperature extremes with better phase performance over temperature compared to solid PTFE dielectrics. Shielding effectiveness >90 dB results from a triple shield construction of woven flat braid, foil, and round braid. This construction also provides substantially better radial torque resistance and connector pull off strength than helically wrapped braid designs.

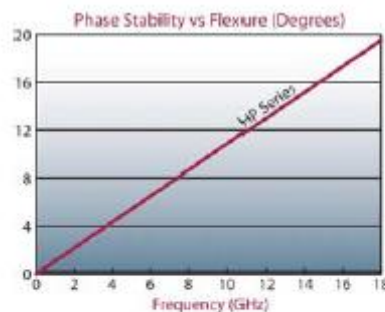
Cable Cross Reference

Semflex	Replacement
HP 120	IW 140x, UFB142, LL120
HP 160	IW 150x
HP 190	IW 180x, UFB 197 C, UFB 205 A LL 142 (Triple Shield)
HP 305	LL 392-2

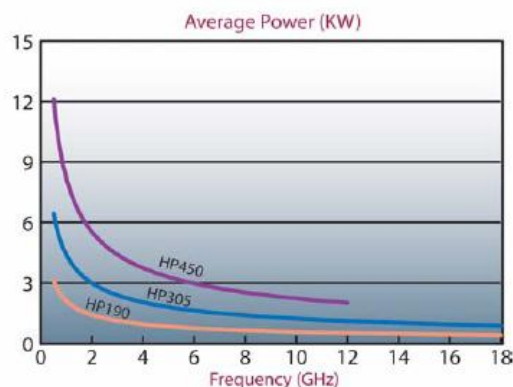
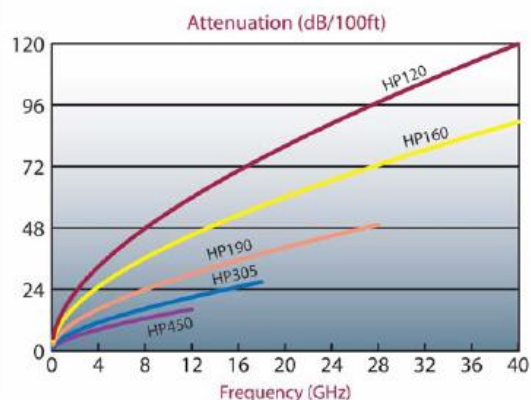
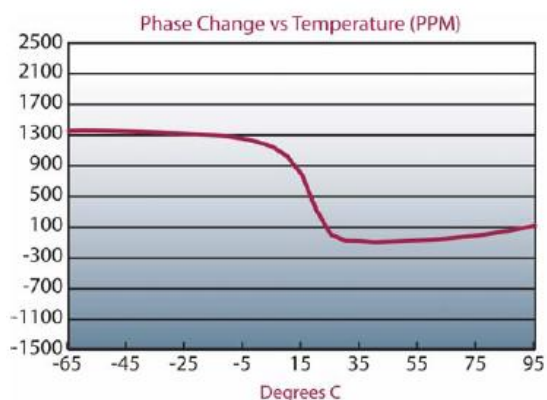


- Silver Plated Copper *
- Low Density Microporous PTFE
- Silver Plated Copper Flat Braid*
- Metalized Foil
- Silver Plated Copper Round Braid*
- Extruded FEP Jacket - Blue Tint

* Silver Plating per ASTM-B-289



Phase stability is defined as the change in phase when the cable is bent 360 degrees around its minimum bend radius.



* Attenuation at any frequency

$$= (k1 \times \sqrt{\text{freq}(\text{GHz})}) + (k2 \times \text{freq}(\text{GHz}))$$

Connectivity Solutions

Whilst due care has been taken to ensure the contents of this data sheet are accurate, Emerson Network Power Connectivity Solutions cannot accept liability for any errors or omissions that may occur. We reserve the right to alter specifications of products without prior notice.

Additional Specifications

Electricals	HP 120s	HP 160s	HP 190s	HP 305s	HP 450s
Impedance (ohms)	50	50	50	50	50
Capacitance (pf/ft)	26.7	26.9	26.7	26.2	26
Inductance (nH/ft)	67	66	66	66	62
Shielding Effectiveness (dB)	>90	>90	>90	>90	>90
Cut Off Frequency (GHz)	55	40	28	18	12
Velocity of Propagation	75.5%	76%	76.5%	77%	78%
Breakdown Voltage (KV)	>5	>7	>10	>15	>20
Max Structural VSWR	1.15:1	1.15:1	1.15:1	1.15:1	1.15:1
Mechanical/ Environmental	HP 120s	HP 160s	HP 190s	HP 305s	HP 450s
Jacket O.D. (in)	.124	.160	.205	.305	.450
Round Braid O.D. (in)	.104	.145	.188	.273	.403
Shield Intelayer O.D. (in)	.088	.129	.172	.256	.378
Metalized Foil O.D. (in)	.080	.120	.163	.248	.369
Dielectric O.D. (in)	.074	.108	.151	.242	.357
Center Conductor O.D. (in)	.025	.036	.051	.078	.129
Center Conductor Type	Solid	Solid	Solid	Solid	Stranded
Inside Min Blend Radius (in)	.6	.9	1.1	1.8	2.5
Weights (lbs/ft)	.02	.04	.05	.09	.20
Operating Temperature (°C)	-65/200	-65/200	-65/200	-65/200	-65/200
Attenuation (dB/100 ft) Guaranteed Max	HP 120s	HP 160s	HP 190s	HP 305s	HP 450s
.5	11.06	8.48	5.44	3.55	2.61
2	22.71	17.34	11.24	7.47	5.58
12	59.82	45.15	30.01	20.89	16.20
18	72.22	56.55	37.91	26.80	-
26	92.98	69.61	47.09	-	-
40	119.90	89.27	-	-	-
*k1	15.22	11.72	7.45	4.76	3.44
*k2	0.59	0.38	0.35	0.37	0.37
Average Power (KW) Power Rating	HP 120s	HP 160s	HP 190s	HP 305s	HP 450s
.5	-	-	3.1	6.4	12.1
1	-	-	2.1	4.4	8.2
2	-	-	1.4	3.0	5.5
6	-	-	.8	1.6	3.0
12	-	-	.5	1.1	2.0
18	-	-	.4	.9	-

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