Astrolab minibend R

High performance, low profile, ruggedized

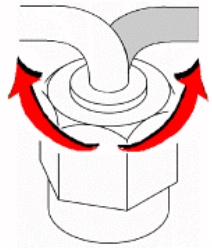
The 'ruggedized' version of the original minibend®

Product Description

minibend® R is designed for use in complex, congested environments where higher cable retention force is required. minibend® R's pull strength is more than 70% greater than standard minibend®. minibend® R when installed and bent at the minimum bend radius will tolerate multiple 90° rotations at the cable/connector junction. The 'R' ruggedization can be added to any minibend®connector style. All materials used in minibend® R assmblies meet or exceed NASA TML and CVCM requirements for use in spacecraft applications.

Product Features

- Precision stainless steel SMA plug connectors (Patented - US Patent Office)
- Connector pull strength 70% stronger than standard minibend and torque resistant utilizing minibend R technology (Patented - US Patent Office)
- Stock delivery on standard lengths
- Eliminates need for costly right angle connectors
- Triple shielded for high isolation
- Frequency range up to 24 GHz
- 99.9% lead free



minibend® R when installed and bent at the minimum bend radius will tolerate multiple 90° rotations at the cable/connector junction.

Note: The 'R' ruggedization can be added to any minibend connector

Environmental Limits

Temperature Range: -60°C to +165°C

Thermal Shock: per Mil-Std-202, Method 107, Test Condition F

Vibration: per Mil-Std-202, Method 214, Test Condition K1 (46.3 Grams)

Phase Versus Flexure Reference Data

Astrolab performed phase tests on hundreds of minibend® cable assemblies. Following are two standard Astrolab tests with the corresponding data. In test one minibend® R–6 assembly's were flexed 90° in a 0.25 inch radius directly behind the connector. In test two, minibend® R–16 assembly's were flexed 180° with a 0.4 inch radius in the middle. Typical data is listed here:

	TEST ONE	TEST TWO
24 GHz.	1.4°	3.9°
18 GHz.	1.2°	2.9°
12.4 GHz.	0.9°	1.8°
1 GHz.	0.1°	0.2°

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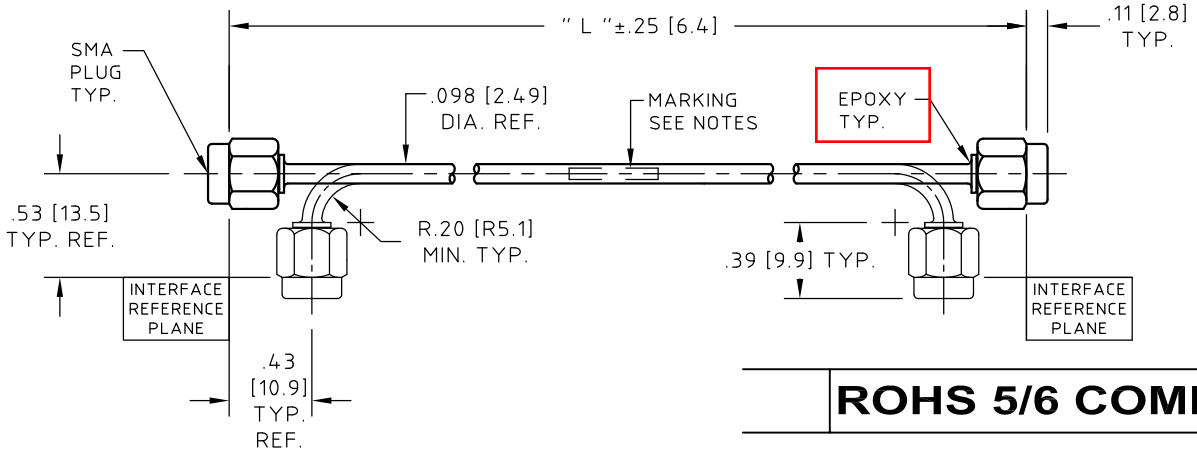
CONTROL DRAWING

minibend R-XX

AB



ROHS 5/6 COMPLIANT

HUBER+SUHNER Astrolab PART NUMBER	DIMENSION "L"	2.0 GHz		12.4 GHz		18.0 GHz		24.0 GHz	
		VSWR	I.L. dB	VSWR	I.L. dB	VSWR	I.L. dB	VSWR	I.L. dB
minibend R-2.5	2.50 [63.5]	1.20:1	0.18	1.25:1	0.36	1.35:1	0.50	1.40:1	0.57
minibend R-3	3.00 [76.2]	1.20:1	0.19	1.25:1	0.40	1.35:1	0.55	1.40:1	0.64
minibend R-3.5	3.50 [88.9]	1.20:1	0.21	1.25:1	0.44	1.35:1	0.60	1.40:1	0.70
minibend R-4	4.00 [101.6]	1.20:1	0.23	1.25:1	0.48	1.35:1	0.65	1.40:1	0.75
minibend R-4.5	4.50 [114.3]	1.20:1	0.24	1.25:1	0.54	1.35:1	0.70	1.40:1	0.82
minibend R-5	5.00 [127.0]	1.20:1	0.26	1.25:1	0.57	1.35:1	0.75	1.40:1	0.87
minibend R-5.5	5.50 [139.7]	1.20:1	0.27	1.25:1	0.62	1.35:1	0.80	1.40:1	0.93
minibend R-6	6.00 [152.4]	1.20:1	0.29	1.25:1	0.65	1.35:1	0.85	1.40:1	0.99
minibend R-6.5	6.50 [165.1]	1.20:1	0.30	1.25:1	0.70	1.35:1	0.90	1.40:1	1.04
minibend R-7	7.00 [177.8]	1.20:1	0.32	1.25:1	0.74	1.35:1	0.95	1.40:1	1.10
minibend R-8	8.00 [203.2]	1.20:1	0.35	1.25:1	0.82	1.35:1	1.05	1.40:1	1.22
minibend R-9	9.00 [228.6]	1.20:1	0.38	1.25:1	0.91	1.35:1	1.15	1.40:1	1.35
minibend R-10	10.00 [254.0]	1.20:1	0.41	1.25:1	0.98	1.35:1	1.24	1.40:1	1.46
minibend R-11	11.00 [279.4]	1.20:1	0.44	1.25:1	1.07	1.35:1	1.34	1.40:1	1.58
minibend R-12	12.00 [304.8]	1.20:1	0.47	1.25:1	1.15	1.35:1	1.42	1.40:1	1.68
minibend R-13	13.00 [330.2]	1.20:1	0.50	1.25:1	1.23	1.35:1	1.53	1.40:1	1.81
minibend R-14	14.00 [355.6]	1.20:1	0.53	1.25:1	1.30	1.35:1	1.62	1.40:1	1.92
minibend R-15	15.00 [381.0]	1.20:1	0.57	1.25:1	1.40	1.35:1	1.73	1.40:1	2.04
minibend R-16	16.00 [406.4]	1.20:1	0.60	1.25:1	1.47	1.35:1	1.82	1.40:1	2.15
minibend R-17	17.00 [431.8]	1.20:1	0.63	1.25:1	1.56	1.35:1	1.95	1.40:1	2.26
minibend R-18	18.00 [457.2]	1.20:1	0.66	1.25:1	1.64	1.35:1	2.05	1.40:1	2.38
minibend R-19	19.00 [482.6]	1.20:1	0.69	1.25:1	1.72	1.35:1	2.15	1.40:1	2.49
minibend R-20	20.00 [508.0]	1.20:1	0.72	1.25:1	1.80	1.35:1	2.25	1.40:1	2.61
minibend R-		1.20:1		1.25:1		1.35:1		1.40:1	

SEE NOTE 8

NOTES:

1. DESCRIPTION,
   CABLE ASSEMBLY, SMA PLUG TO SMA PLUG, RUGGEDIZED AND SUITABLE FOR COMPLEX, CONGESTED INSTALLATIONS.
   WHEN INSTALLED AND BEND AT THE MINIMUM BEND RADIUS, CABLE ASSEMBLY WILL TOLERATE MULTIPLE ±90° ROTATIONS AT THE CABLE CONNECTOR JUNCTION.

2. CABLE,
   COAXIAL CABLE HUBER+SUHNER Astrolab P/N 32081E
   MEETS OR EXCEEDS MIL-DTL-17
   SEE HUBER+SUHNER Astrolab CONTROL DRAWING FOR MATERIALS AND FINISHES.

3. CONNECTOR -A-, SMA PLUG:
   HUBER+SUHNER Astrolab P/N 29094CR-32-81
   INTERFACE DIMENSIONS IAW MIL-STD-348.
   SEE HUBER+SUHNER Astrolab CONTROL DRAWING FOR MATERIALS AND FINISHES.

4. CONNECTOR -B-, SMA PLUG:
   SAME AS CONNECTOR -A-.

NOTES CONTINUED:

5. MARKING:
   MARKING APPROXIMATELY CENTERED DIRECTLY ON CABLE AS FOLLOWS:
   MINIBEND R-XX YYWW
   WHERE XX DENOTES THE LENGTH OF THE CABLE ASSEMBLY AND YYWW THE DATE CODE FOR DATE OF MANUFACTURE.
   NO MARKING ON CABLE ASSEMBLIES SHORTER THAN 3.00 [76.2].
   MARKING ON PACKAGING ONLY.

6. ELECTRICAL CHARACTERISTICS:
   IMPEDANCE,
   50.0 Ohms NOMINAL.
   FREQUENCY, INSERTION LOSS AND VSWR,
   SEE CHART.

7. MECHANICAL:
   OPERATING TEMPERATURE RANGE,
   -55° C TO +125° C.
   MECHANICAL PERFORMANCE,
   PULL STRENGTH TO 25.0 LBS. [111.2 N].

8. ATTENUATION FORMULAS:
   8A. CALCULATE AT 18.0 GHz
   (dB) = 1.20 dB/FT. X L(ft.)+.25 dB
   8B. CALCULATE AT 24.0 GHz
   (dB) = 1.39 dB/FT. X L(ft.)+.29 dB

	NAME	DATE
PREP.	E H.	03/14/00
ELEC.	R.F.	03/14/00
MECH.	D.P.D.	03/14/00
Q.C.		

HUBER+SUHNER Astrolab

UNLESS OTHERWISE SPECIFIED CONCENTRICITY .004 T.I.R. CORNERS AND FILLETS .005 MAX. RADIUS OR CHAMFER. SURFACE FINISH 63 RMS MICROINCHES OR BETTER.

FRACTIONS	± 1/16
X	± .030
XX	± .015
XXX	± .005
ANGLES	± 1°
DO NOT SCALE DRAWING	

TITLE

CABLE ASSEMBLY, SMA PLUG TO SMA PLUG, RUGGEDIZED

THDS. TO BE IN ACCORD WITH U.S. DEPT. OF COMM. SCREW THD. STDS. FOR FEDERAL SERVICES 1950 SUPL. TO HANDBOOK H 28.

SCALE	CODE IDENT.	DWG NO.	REV
1:1	16301	minibend R-XX	AB

REV.	DESCRIPTION	DATE	BY	APPROVED
AB	ECN No. 15486	04/10/13	EB	