

INCH-POUND

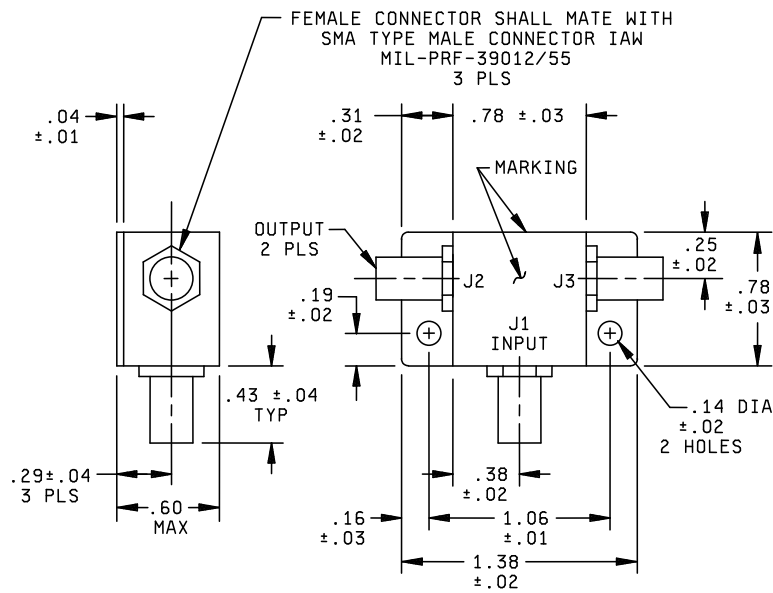
MIL-DTL-23971/16B
16 November 2015
SUPERSEDING
MIL-DTL-23971/16A
30 August 2006

DETAIL SPECIFICATION SHEET

POWER DIVIDER/COMBINERS, N-WAY, 0 DEGREES, SMA CONNECTORS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-23971.



Inches	mm	Inches	mm
.01	0.3	.29	7.4
.02	0.5	.31	7.9
.03	0.8	.38	9.7
.04	1.0	.43	10.9
.14	3.6	.50	12.7
.16	4.1	.78	19.8
.19	4.8	1.06	26.9
.25	6.4	1.38	35.1

NOTES:

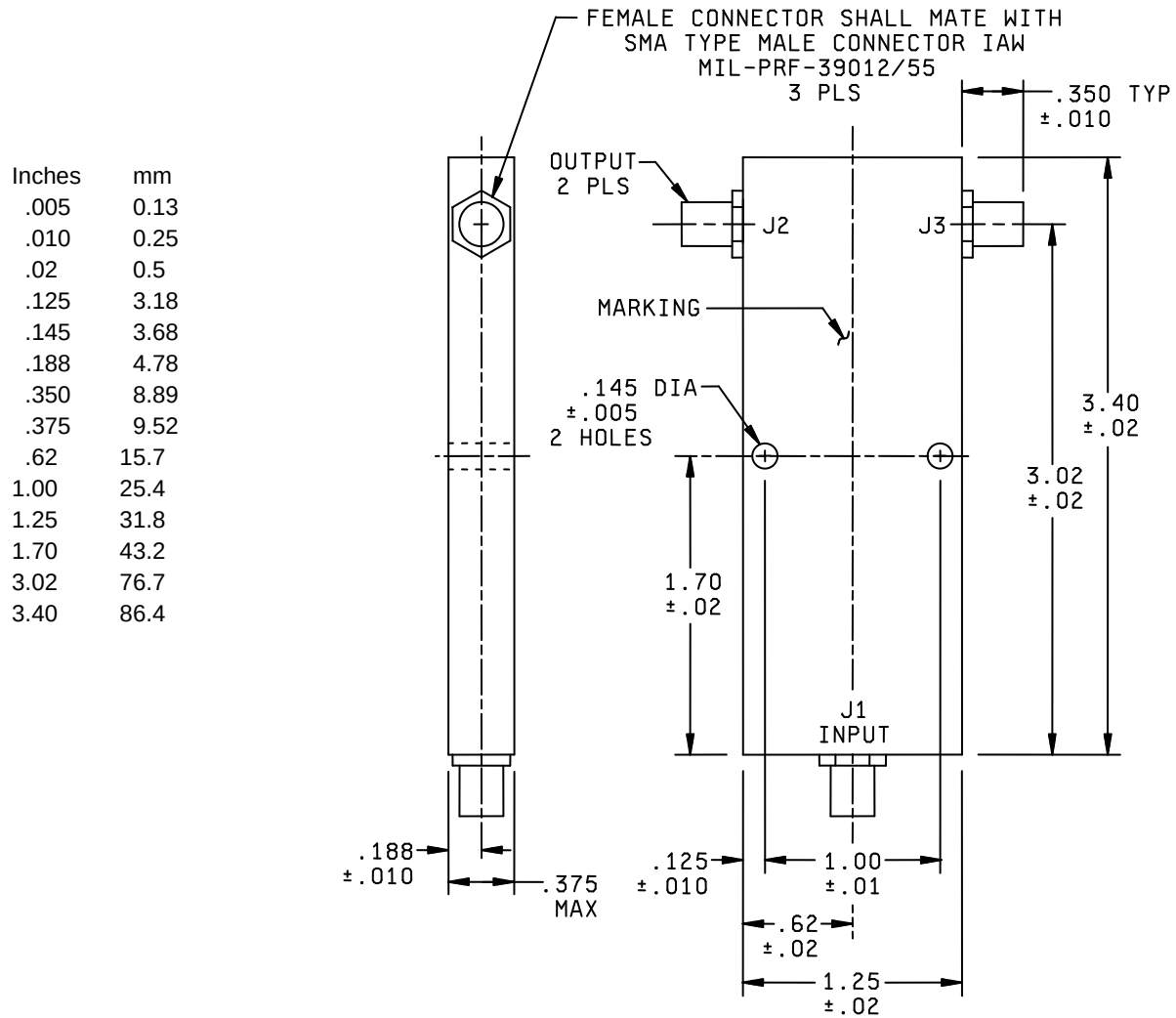
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 1. Dimensions and configuration, 2-way, dash number 01.

AMSC N/A

FSC 5985

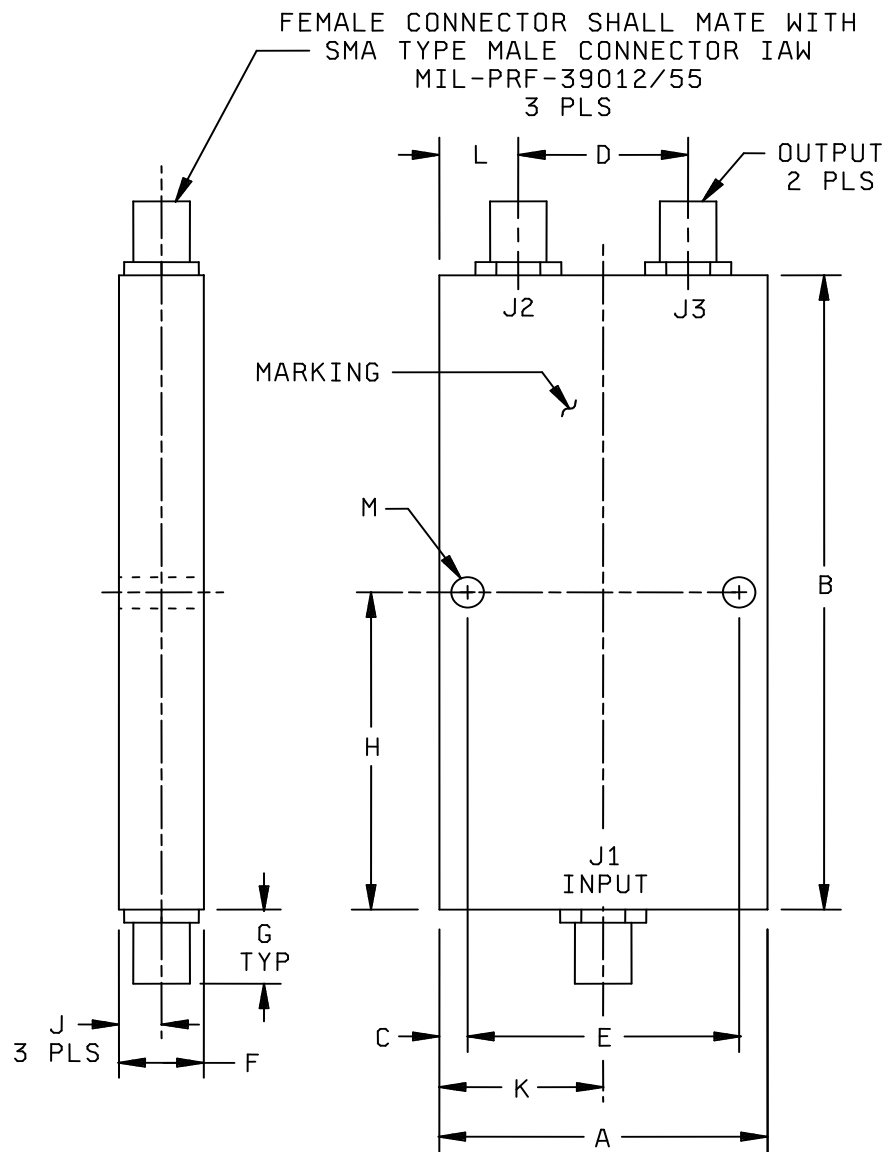




NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

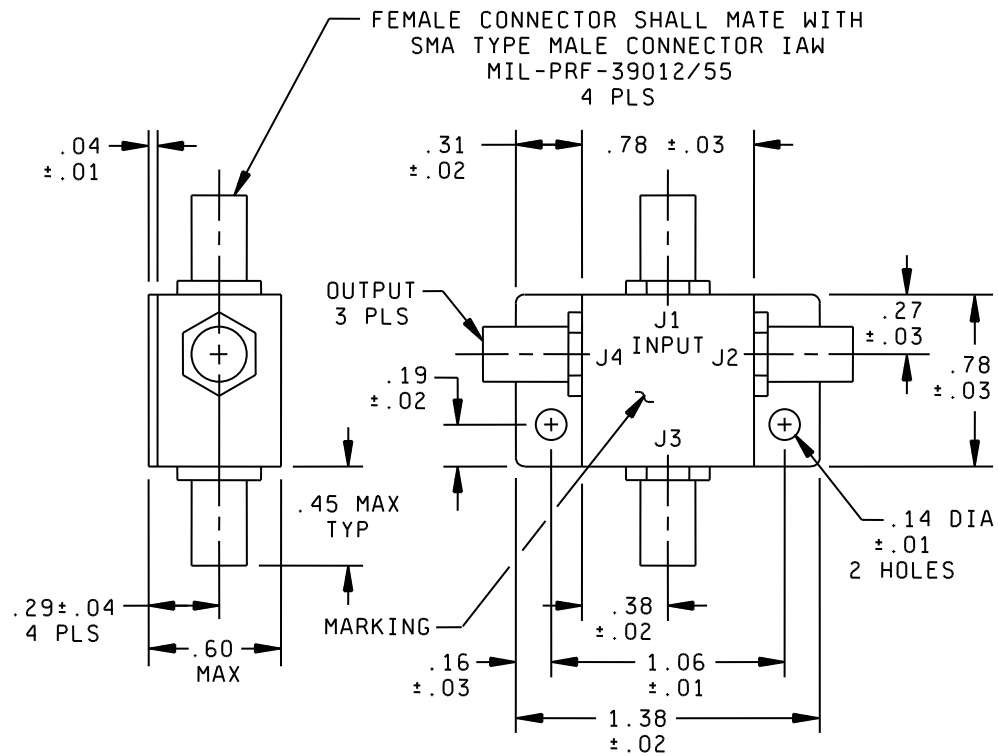
FIGURE 2. Dimensions and configuration, 2-way, dash number 02.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

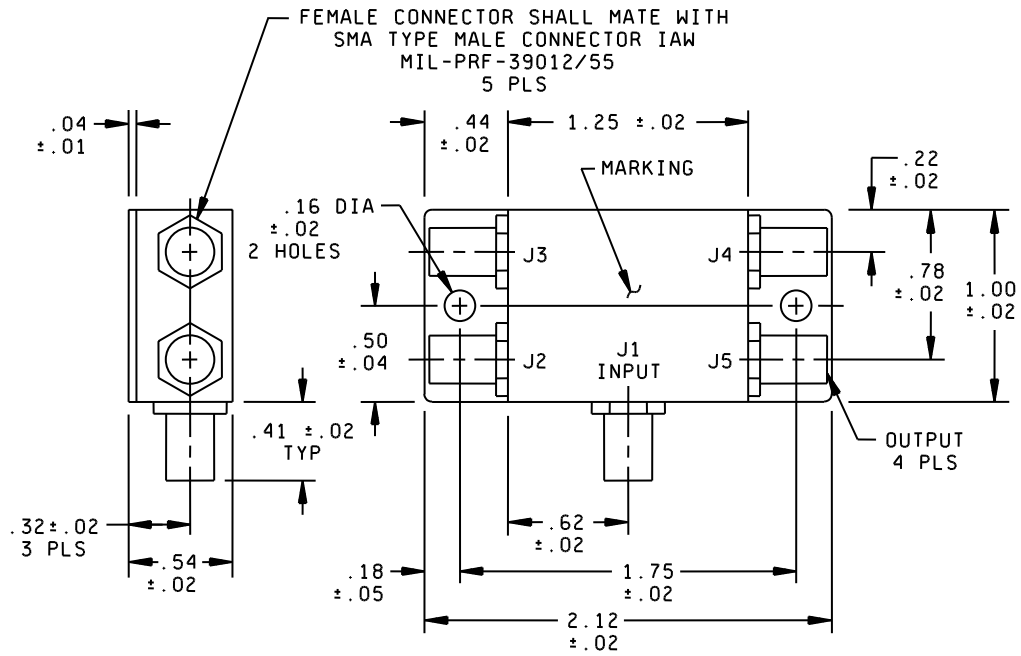
FIGURE 3. Dimensions and configuration, 2-way, dash numbers 03 and 04.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 4. Dimensions and configuration, 3-way, dash number 05.

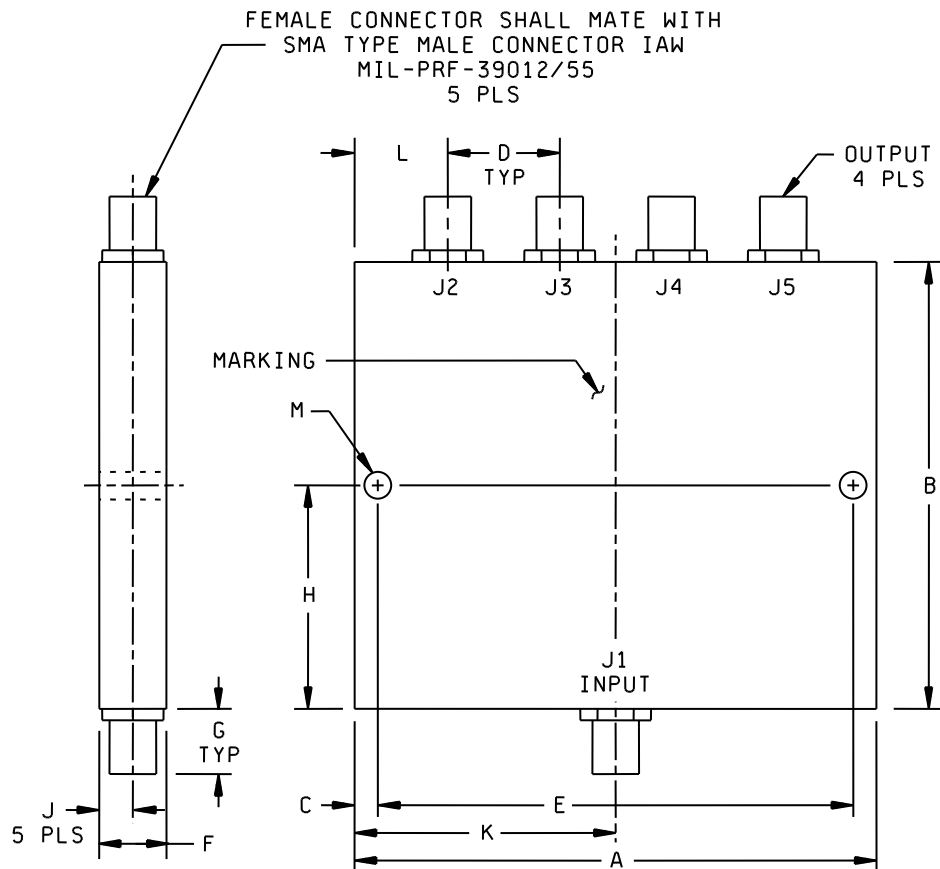


Inches	mm	Inches	mm	Inches	mm	Inches	mm
.01	0.3	.16	4.1	.44	11.2	1.00	25.4
.02	0.5	.18	4.6	.50	12.7	1.25	31.8
.03	0.8	.22	5.6	.54	13.7	1.75	44.4
.04	1.0	.32	8.1	.62	15.7	2.12	53.8
.05	1.3	.41	10.4	.78	19.8		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 5. Dimensions and configuration, 4-way, dash numbers 06, 07, 08, 09, 10, and 11.



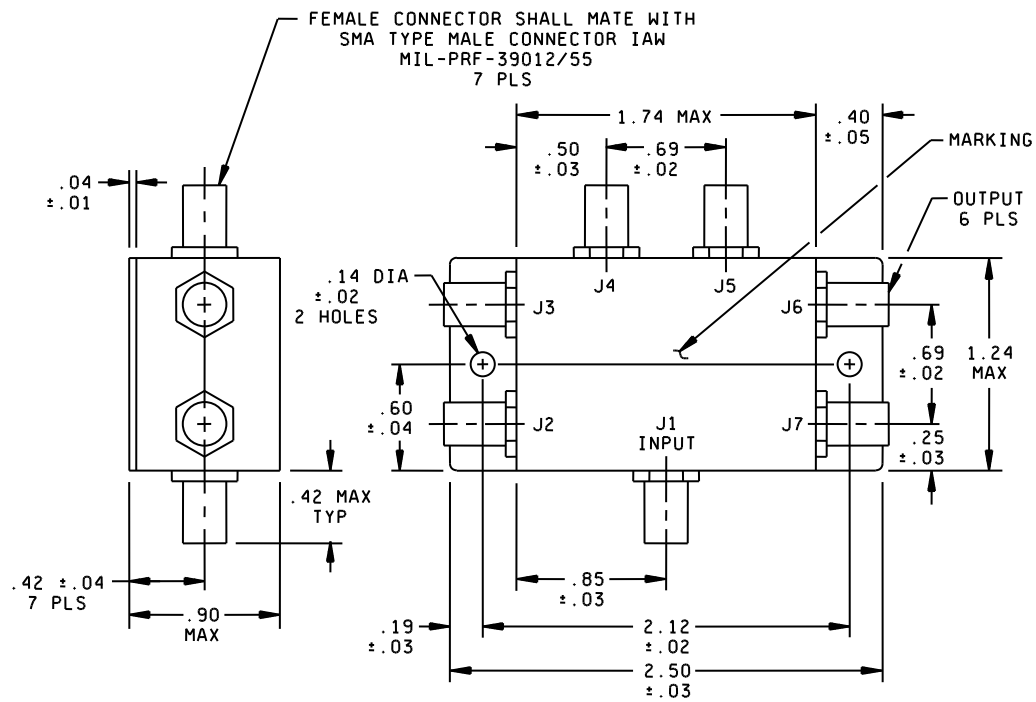
Inches	mm	Inches	mm	Inches	mm	Inches	mm
.005	0.13	.18	4.6	.60	15.2	2.40	61.0
.01	0.3	.35	8.9	.70	17.8	2.55	64.8
.02	0.5	.36	9.1	.75	19.0	2.80	71.1
.03	0.8	.37	9.4	1.20	30.5	2.85	72.4
.125	3.18	.45	11.4	1.40	35.6	2.95	74.9
.142	3.61	.50	12.7	1.60	40.6	3.20	81.3
.145	3.68	.55	14.0				

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 6. Dimensions and configuration, 4-way, dash numbers 12, 13, and 14.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm
.01	0.3	.14	3.6	.50	12.7	1.23	31.2
.02	0.5	.19	4.8	.60	15.2	1.73	43.9
.03	0.8	.25	6.4	.69	17.5	2.12	53.8
.04	1.0	.40	10.2	.85	21.6	2.50	63.5
.05	1.3	.42	10.7	.87	22.1		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 7. Dimensions and configurations, 6-way, dash number 15.

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TABLE I. Dimensions.

M23971/16-	A	B	C	D	E	F	G	H	J	K	L	M	Figure
03, 04	1.45 ± .02	3.00 ± .02	.120 ± .030	.75 ± .02	1.20 ± .01	.37 ± .02	.35 ± .03	1.500 ± .020	.185 ± .010	.72 ± .02	.35 ± .02	.145 ± .005	3
12	3.20 ± .02	2.85 ± .02	.125 ± .030	.70 ± .02	2.95 ± .01	.37 ± .02	.35 ± .03	.142 ± .020	.185 ± .010	1.60 ± .02	.55 ± .02	.145 ± .005	6
13	3.20 ± .02	2.85 ± .02	.125 ± .030	.70 ± .02	2.95 ± .01	.37 ± .02	.35 ± .03	.142 ± .020	.185 ± .010	1.60 ± .02	.55 ± .02	.145 ± .005	6
14	2.80 ± .02	2.40 ± .02	.125 ± .030	.60 ± .02	2.55 ± .01	.36 ± .02	.35 ± .03	1.200 ± .020	.180 ± .010	1.40 ± .02	.50 ± .02	.145 ± .005	6

Inches	mm	Inches	mm	Inches	mm
.005	0.13	.35	8.89	1.40	35.6
.01	0.3	.36	9.14	1.45	36.8
.02	0.5	.37	9.40	1.500	38.10
.020	0.51	.50	12.7	1.60	40.6
.030	0.76	.55	14.0	2.40	61.0
.120	3.05	.60	15.2	2.55	64.8
.125	3.17	.70	17.8	2.80	71.1
.142	3.61	.72	18.3	2.85	72.4
.145	3.68	.75	19.1	2.95	74.9
.180	4.57	1.20	30.5	3.00	76.2
.185	4.70	1.200	30.48	3.20	81.3

REQUIREMENTS:

Design and construction: See figure 1 through figure 7.

Case: Enclosed type.

Electrical characteristics: See table II.

Weight: See table II.

Ambient temperature: See table II.

Environmental requirements: See table III.

Part or Identifying Number (PIN): M23971/16- (dash number from table II).

TABLE II. Electrical performance characteristics and physical requirements.

M23971/16-	Impedance (ohms)	Frequency range GHz	Average coupling (dB)	VSWR max	Insertion loss max (dB)	Isolation min (dB)	Phase balance max (degree)	Amplitude balance max (dB)	Power level		Weight pounds (grams)	Ambient temperature		Figure
									avg (W)	pk (W)		Operating	Storage	
01	50	1-100 MHz	3.01 + 0.5 - 0.0	1.3:1	0.5	30	± 1.0	± 0.2	2	---	.062 (28)	-55°C to +85°C	-65°C to +85°C	1
02	50	1.0-2.0	3.0 + 0.2 - 0.0	1.25:1	0.3	20	± 6.0	± 0.4	.1	---	.17 (77)	0°C to +71°C	0°C to +71°C	2
03	50	1.0-2.0	3.0 + 0.2 - 0.0	1.25:1	0.3	20	± 6.0	± 0.4	.1	---	.17 (77)	0°C to +71°C	0°C to +71°C	3
04	50	1.0-4.0	3.0 + 0.2 - 0.0	1.7:1	0.40	22	± 4.0	± 0.2	1	<u>1</u> /	.25 (110)	-35°C to +105°C	-55°C to +125°C	3
		4.0-8.0		1.6:1	0.80									
		8.0-12.0			1.20	16	± 5.0							
		12.0-12.4			1.30									
05	50	10-100 MHz	4.77+ 0.5 - 0.0	1.3:1	0.5	30	± 1.0	± 0.2	5	---	.120 (55)	-55°C to +85°C	-65°C to +85°C	4
06	50	2-32 MHz	6.0 + 0.5 - 0.0	1.3:1	0.7	30	± 1.0	± 0.2	2	---	.06 (27)	-55°C to +72°C	-62°C to +110°C	5
07	50	10-100 MHz	6.02 + 0.7 - 0.0	1.3:1	0.7	30	± 1.0	± 0.2	2	---	.06 (27)	-55°C to +72°C	-62°C to +110°C	5
08	50	20-200 MHz	6.0 + 0.5 - 0.0	1.3:1	0.7	30	± 1.0	± 0.2	2	---	.06 (27)	-55°C to +72°C	-62°C to +110°C	5
09	50	100-300 MHz	6.0 + 0.5 - 0.0	1.3:1	1.0	30	± 1.0	± 0.2	2	---	.06 (27)	-55°C to +72°C	-62°C to +110°C	5
10	50	200-500 MHz	6.0 + 0.5 - 0.0	1.3:1	1.0	30	± 1.0	± 0.2	2	---	.06 (27)	-55°C to +72°C	-62°C to +110°C	5

See footnotes at end of table.

TABLE II. Electrical performance characteristics and physical requirements - Continued.

M23971/16-	Impedance (ohms)	Frequency range GHz	Average coupling (dB)	VSWR max	Insertion loss max (dB)	Isolation min (dB)	Phase balance max (degree)	Amplitude balance max (dB)	Power level		Weight pounds (grams)	Ambient temperature		Figure
									avg (W)	pk (W)		Operating	Storage	
11	50	250-500 MHz	6.0 + 0.5 - 0.0	1.3:1	1.0	30	± 1.0	± 0.2	2	---	.062 (28)	-54°C to +71°C	-57°C to +71°C	5
12	50	1-2	6.0 + 0.5 - 0.0	1.35:1	0.6	20	± 6.0	± 0.6	.1	---	.37 (170)	0°C to +71°C	0°C to +71°C	6
13	50	1-2	6.0 + 0.9 - 0.0	1.35:1	0.6	20	± 6.0	± 0.6	.316 2/	---	.36 (160)	0°C to +71°C	0°C to +71°C	6
14	50	2-4	6.0 + 0.5 - 0.0	1.35:1	0.6	18	± 3.0	± 0.3	.1	---	.360 (162)	-54°C to +71°C	-57°C to +71°C	6
15	50	10-100 MHz	7.8 + 0.7 - 0.0	1.3:1	1.0	30	± 2.0	± 0.2	2	---	.19 (160)	-46°C to +63°C	-57°C to +7°C	7

1/ Power level: 275 watt, peak, minimum for 100 nanoseconds.

2/ Power level: When used as a power combiner, the maximum power to each port is .0794 watts for coherent (equal amplitude, phase, and frequency) signals. For 180° out of phase signals power rating is reduced to .02 watts per port.

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TABLE III. Environmental tests: In accordance with MIL-DTL-23971 except:

M23971/16-	Vibration	Shock	Salt spray	Explosion	Acceleration
01, 05, 06, 07, 08, 09, 10	Test condition B	<u>2/</u>	Test condition A	<u>2/</u>	<u>2/</u>
04, 15	<u>2/</u>	Test condition A	<u>2/</u>	<u>2/</u>	<u>2/</u>
11	<u>2/</u>	<u>2/</u>	<u>2/</u>	Applicable	<u>1/</u>
13	<u>2/</u>	Test condition I	Test condition A	<u>2/</u>	<u>2/</u>
14	<u>2/</u>	Test condition I	<u>2/</u>	<u>2/</u>	<u>2/</u>

1/ The item shall be tested in accordance with method 212 of MIL-STD-202, test condition A with a 6g level. The acceleration measured at any point of the component shall not exceed a 0.9g level. After the test, the VSWR, insertion loss, isolation, phase balance, and amplitude balance tests shall be performed in accordance with MIL-DTL-23971, 4.7.4, 4.7.5, 4.7.6, 4.7.7, and 4.7.8 requirements, respectively.

2/ Not applicable.

TABLE IV. Supersession data.

PIN M23971/16-	Supersedes M15370/13-
01	001
05	002
07	003

Referenced documents. In addition to MIL-DTL-23971, this specification sheet references the following documents:
MIL-PRF-39012/55
MIL-STD-202

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Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:

DLA - CC

(Project 5985-2016-002)

Review activities:

Navy - AS, MC, OS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil/>.