

Introduction

Amphenol MS and 97 series are two series of thread-coupled connectors designed to meet the operating requirements of **MIL-C-5015**. Available in a variety of styles and classes, these connectors are primarily used in a range of military and industrial applications where specific degrees of environmental protection are required.

Although both MS and 97 series have identical insert arrangements and other similar component parts, the two series differ in that Amphenol MS series of connectors are also qualified to meet the operating requirements of Defence Standard Joint Services Specification **JSS50812**, issued by the Electronics Components Standardization Organisation (LCSO).

Amphenol 97 series is exclusively designed to meet the needs of industry, which may call for deviations from MIL specification.

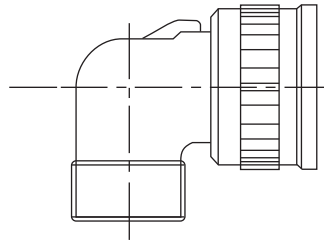
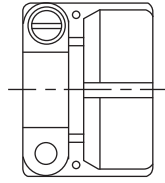
Amphenol 97B connectors feature a quick mating bayonet coupling with an audible full mating feature. This series uses the same **MIL-C-5015** insert patterns and are used in high shock and vibration environments encountered in commercial, geophysical, aerospace, ground support and shipboard applications.

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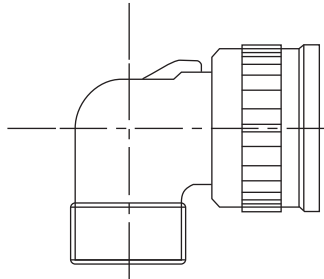
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Connector styles

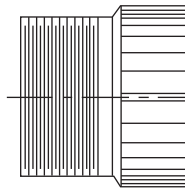
**Class F
(Class R w/o
cable clamp)**



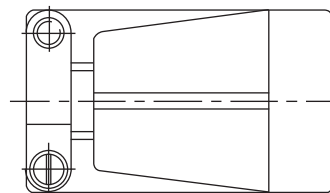
Class A



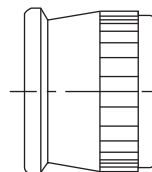
Class A



Class E and F



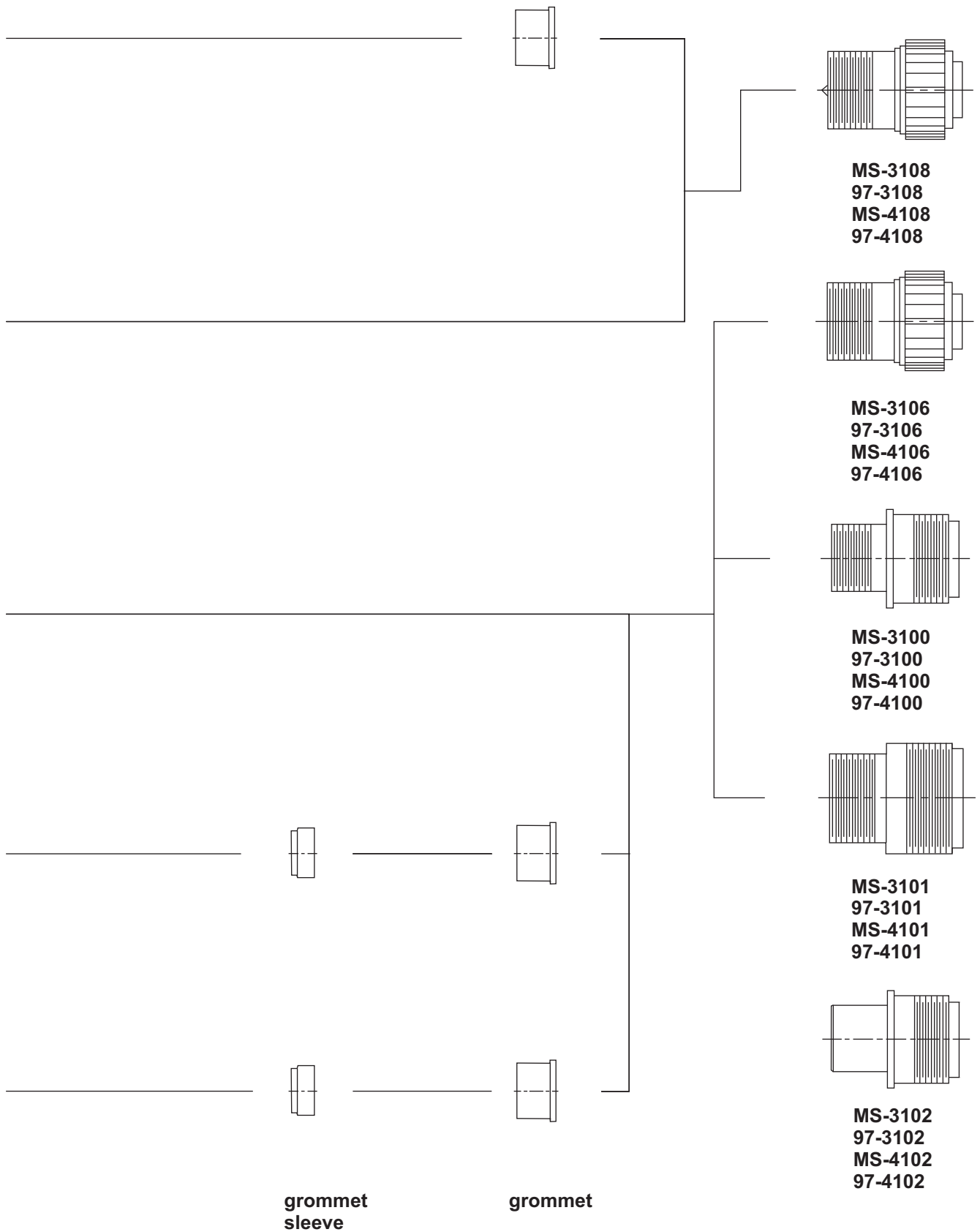
Class R



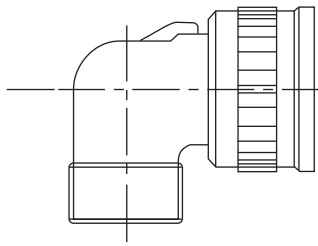
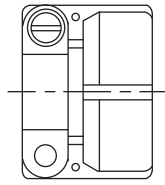
**cable
clamp**

**back
shell**

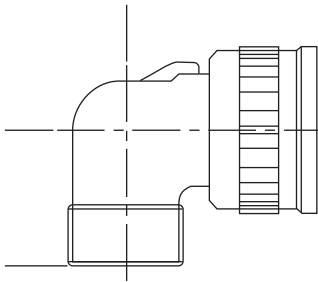
Connector styles



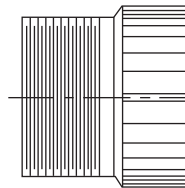
**Class F
(Class R w/o
cable clamp)**



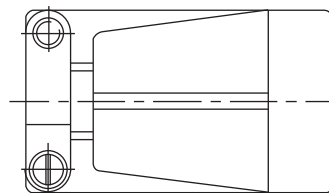
Class A



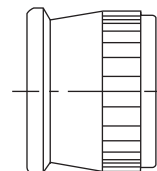
Class A



Class F

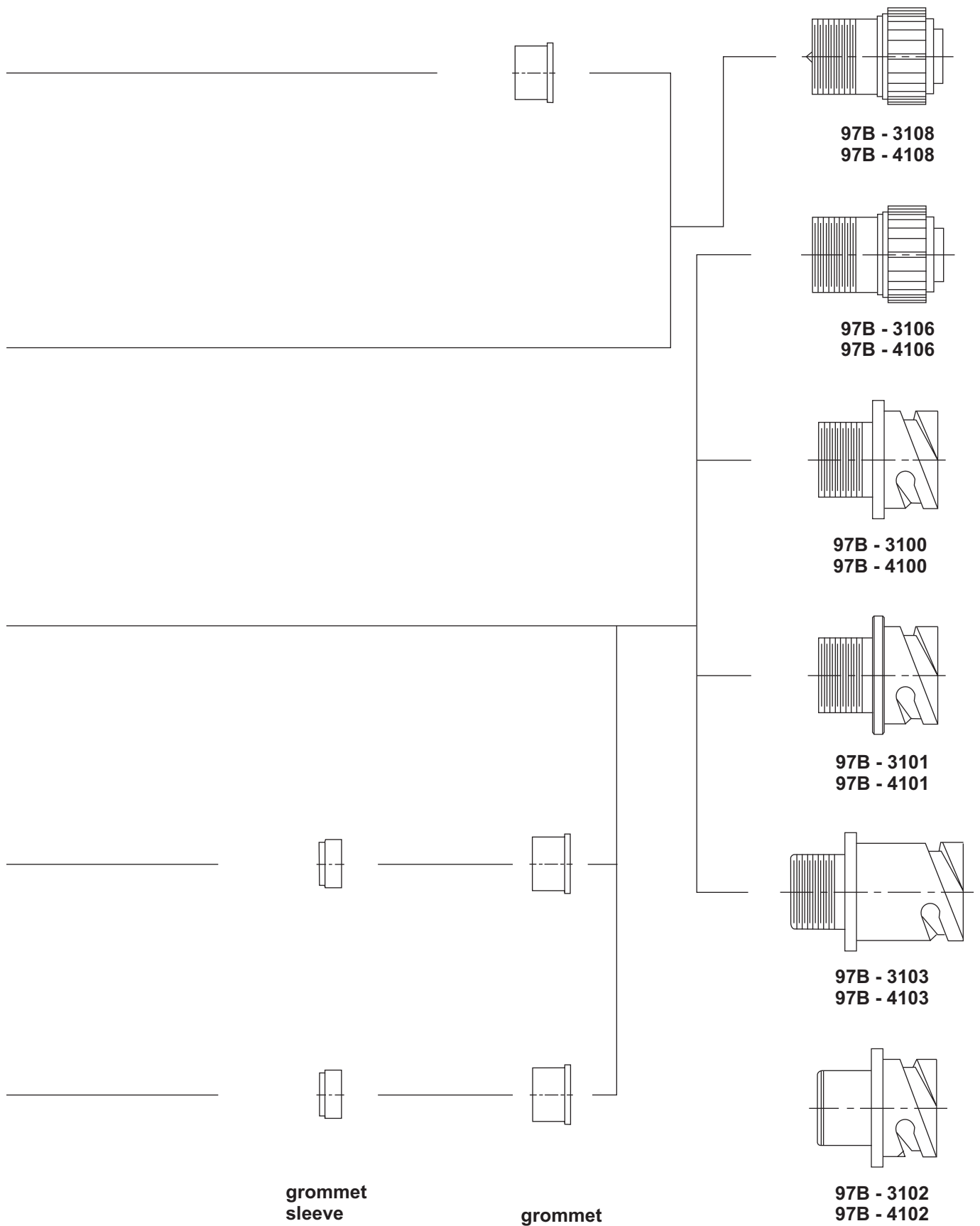


Class R



**cable
clamp**

**back
shell**



General description

These electrical connectors are designated MS because the interchangeability and operating characteristics are determined by U.S. Military Specifications. These specifications are revised from time to time to incorporate performance requirements dictated by design advances and more stringent requirements of allied equipment. The several designations of MS, 97 and 97B connectors meet different requirements of MIL-C-5015. These designations and general descriptions are as follows :

Shell

Shell constructions include solid back shell (A) and environmental resistant (E, F & R). Environmental resistant connectors provide a moisture barrier and assure a positive seal. Shell styles consist of wall type receptacles (3100), cable receptacles (3101), box receptacles (3102), straight plugs (3106) and angle plugs (3108). Shell hardware is manufactured from aluminium alloy and cadmium plated with olive drab chromate finish. This finish has excellent conductivity; it is non-reflecting and corrosion resistant. Black anodised finish and cadmium-free zinc plating with olive drab chromate finish are also available. For details, contact factory.

Contacts

Pin and socket contacts are of brass and generally silver plated. Gold plating is also available. For details contact factory. These contacts are available for solder or crimp termination. Special arrangements of contacts for pre-mating and pre-earth are also available.

Inserts and grommet

Synthetic inserts and grommet manufactured according to MIL-R-3065, offer high dielectric strength and are resistant to oils, gasoline and low temperature. 97 series inserts use Diallyl Phthalate (Blue DAP). DAP is dimensionally stable, has high arc resistance and high insulation resistance under both humidity and thermal stress.

General description

Plugs are available in A, F and R types. Receptacles are available in A, E, F and R types.

A solid back shell

Intended for general service usage to provide convenient means of connecting and disconnecting electrical circuits in industrial and military applications.

Environmental resisting

Intended for use where the connector will be subject to heavy condensation and rapid changes in temperature or pressure and/or where the connector is subjected to high vibratory conditions.

E Environmental resisting with grommet seal and strain relief backshell except for 3102 type.

F Environmental resisting with grommet seal, strain relief backshell and front gasket seal for plug type.

R Environmental resisting with grommet seal, shorter and lightweight.

Features for 97B reverse bayonet coupling connectors with Mil-C-5015 insert patterns:

- Quick positive coupling
- Audible and tactile indication of full coupling
- Waterproof
- No lockwiring required
- High shock and vibration capabilities
- Insert available in Neoprene material (alternate inserts materials available upon request)
- Operating temperature range with Neoprene inserts: -55°C to +125°C
- Available in both crimp and solder terminations
- Contacts available in gold and silver plating
- Numerous finishes available
- Zinc alloy plating (cadmium free) available
- Rugged construction; aluminum or stainless steel components
- Intermateable with existing VG95234 connectors
- 500 couplings minimum

Electrical data

Dielectric strength

Service rating	Test Voltage Vac rms
Inst.	1000V
A	2000V
D	2800V
E	3500V
B	4500V
C	7000V

Contact rating

Contact Size	Rated Current	Contact Resistance miliohms
16	13A	3.46
12	23A	1.83
8	46A	0.52
4	80A	0.26
0	150A	0.14

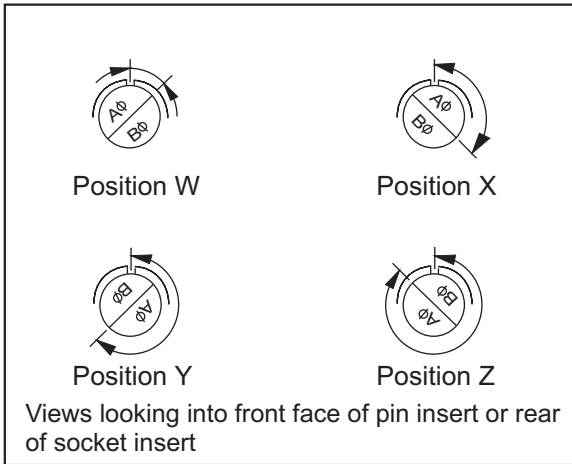
Service rating

Service rating	Operating Voltage DC at Sea Level	Operating Voltage AC at Sea Level
Inst.	250V	200V
A	700V	500V
D	1250V	900V
E	1750V	1250V
B	2450V	1750V
C	4200V	3000V

Insert orientations

To avoid cross-plugging problems in applications requiring the use of more than one connector of the same size and arrangement, alternate insert rotations are available as indicated in the accompanying chart.

As shown in the daigram below, the front face of the pin insert is rotated within the shell in a clockwise direction from the normal shell key. The socket insert would be rotated counterclockwise the same number of degrees with respect to the normal shell key.



The following insert arrangements have the same alternate insert rotations for W, X, Y and Z which are as below :

Degree			
W	X	Y	Z
80	110	250	280

16-7	20-16	22-18	24-4	24-21	28-15	36-1
18-5	20-20	22-19	24-5	24-28	28-16	36-7
18-9	20-22	22-21	24-6	28-1	28-17	36-8
18-13	22-3	22-24	24-7	28-4	28-19	36-13
18-14	22-6	22-25	24-12	28-8	28-20	
20-7	22-12	22-29	24-14	28-9	28-21	
20-8	22-14	22-33	24-16	28-10	32-1	
20-9	22-15	22-34	24-17	28-11	32-3	
20-12	22-16	24-1	24-20	28-14	32-4	
20-14	22-17	24-3				

Insert Arrangement	Degrees			
	W	X	Y	Z
12S-3	70	145	215	290
14S-2	-	120	240	-
14S-5	-	110	-	-
14S-7	90	180	270	-
14S-9	70	145	215	290
16-9	35	110	250	325
16-10	90	180	270	-
16-11	35	110	250	325
16-13	35	110	250	325
16S-1	80	-	-	280
16S-4	35	110	250	325
16S-5	70	145	215	290
16S-6	90	180	270	-
16S-8	-	170	265	-
18-1	70	145	215	290
18-3	35	110	250	325
18-4	35	110	250	325
18-8	70	-	-	290
18-10	-	120	240	-
18-11	-	170	265	-
18-12	80	-	-	280
18-15	-	120	240	-
18-20	90	180	270	-
18-22	70	145	215	290
18-29	90	180	270	-
20-3	70	145	215	290
20-4	45	110	250	-
20-5	35	110	250	325

Insert Arrangement	Degrees			
	W	X	Y	Z
20-6	70	145	215	290
20-15	80	-	-	280
20-17	90	180	270	-
20-18	35	110	250	325
20-19	90	180	270	-
20-21	35	110	250	325
20-23	35	110	250	325
20-24	35	110	250	325
20-27	35	110	250	325
20-29	80	-	-	280
22-1	35	110	250	325
22-2	70	145	215	290
22-4	35	110	250	325
22-5	35	110	250	325
22-8	35	110	250	325
22-9	70	145	215	290
22-10	35	110	250	325
22-11	35	110	250	325
22-13	35	110	250	325
22-20	35	110	250	325
22-22	-	110	250	-
22-23	35	-	250	-
22-27	80	-	250	280
22-28	80	-	-	280
24-2	80	-	-	280
24-9	35	110	250	325
24-10	80	-	-	280
24-11	35	110	250	325

Insert Arrangement	Degrees			
	W	X	Y	Z
24-22	45	110	250	-
24-27	80	-	-	280
28-2	35	110	250	325
28-3	70	145	215	290
28-5	35	110	250	325
28-6	70	145	215	290
28-7	35	110	250	325
28-12	90	180	270	-
28-18	70	145	215	290
28-22	70	145	215	290
32-8	80	125	235	280
36-3	70	145	215	290
36-4	70	145	215	290
36-5	-	120	240	-
36-6	35	110	250	325
36-9	80	125	235	280
36-10	80	125	235	280
36-14	90	180	270	-
36-15	60	125	245	305
40-56	72	144	216	288

Insert Arrangements

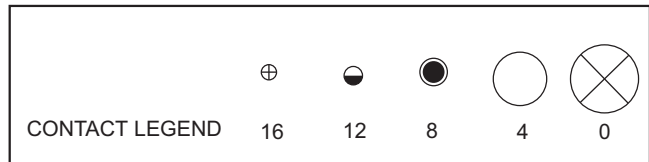
Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
10S-2	A	1					1
10SL-3	A	3					3
10SL-4	A	2					2
12S-3	A	2					2
12S-4	D	1					1
12-5	D	1					1
14S-2	Inst	4					4
14S-4	D	1					1
14S-5	Inst	5					5
14S-6	Inst	6					6
14S-7	A	3					3
14S-9	A	2					2
14S-10	Inst	4					4
14S-12	A	3					3
14-3	A	1			1		
16S-1	A	7					7
16S-3	B	1					1
16S-4	D	2					2
16S-5	A	3					3
16S-6	A	3					3
16S-8	A	5					5
16-2	E	1				1	
16-7	A	3			1	2	
16-9	A	4				2	2
16-10	A	3				3	
16-11	A	2				2	
16-12	A	1		1			
16-13	A	2				2	
18-1	A/Inst	10					10
18-3	D	2				2	
18-4	D	4					4
18-5	D	3				2	1
18-6	D	1		1			
18-7	B	1			1		
18-8	A	8				1	7
18-9	Inst	7				2	5
18-10	A	4				4	
18-11	A	5				5	
18-12	A	6					6
18-13	A	4			1	3	
18-14	A	2		1			1
18-15	A	4				4	
18-16	C	1				1	
18-17	Inst	7				2	5
18-19	A	10					10
18-20	A	5					5
18-22	D	3					3
18-24	A/Inst	10					10
18-29	A	5					5
18-30	A	5					5
18-31	A	5					5
20-3	D	3					3
20-4	D	4					4
20-6	D	3					3
20-7	D/A	8					8
20-8	Inst	6			2		4

Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
20-9	D/A	8				1	7
20-11	Inst	13					13
20-12	A	2		1			1
20-14	A	5			2	3	
20-15	A	7				7	
20-16	A	9				2	7
20-17	A	6				5	1
20-18	A	9				3	6
20-19	A	3			3		
20-20	A	4		1		3	
20-21	A	9				1	8
20-22	A	6			3		3
20-23	A	2			2		
20-24	A	4			2		2
20-25	Inst	13					13
20-27	A	14					14
20-29	A	17					17
20-30	Inst	13					13
20-33	A	11					11
22-1	D	2			2		
22-2	D	3			3		
22-4	A	4			2	2	
22-5	D	6				2	4
22-6	D	3			2		1
22-7	E	1	1				
22-8	E	2				2	
22-9	E	3				3	
22-10	E	4					4
22-11	B	2					2
22-12	D	5			2		3
22-13	D/A	5				4	1
22-14	A	19					19
22-15	E/A	6				5	1
22-16	A	9				3	6
22-17	D/A	9				1	8
22-18	D/A	8					8
22-19	A	14					14
22-20	A	9					9
22-21	A	3	1				2
22-22	A	4			4		
22-23	D/A	8				8	
22-24	D/A	6				2	4
22-27	D/A	9			1		8
22-28	A	7				7	
22-33	D/A	7					7
22-34	D	5				3	2
24-2	D	7				7	
24-3	D	7				2	5
24-5	A	16					16
24-6	D/A	8				8	
24-7	A	16				2	14
24-9	A	2		2			
24-10	A	7			7		
24-11	A	9			3	6	
24-12	A	5		2		3	
24-16	D/A	7			1	3	3
24-17	D	5				2	3

Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
24-20	D	11				2	9
24-21	D	10			1		9
24-22	D	4			4		
24-27	E	7					7
24-28	Inst	24					24
28-1	D/A	9			3	6	
28-2	D	14				2	12
28-3	E	3			3		
28-4	E/D	9				2	7
28-5	D	5		2		1	2
28-6	D	3		3			
28-7	D	2		2			
28-8	E/D/A	12				2	10
28-9	D	12				6	6
28-10	D/A	7		2	2	3	
28-11	A	22				4	18
28-12	A	26					26
28-13	A	26					26
28-15	A	35					35
28-16	A	20					20
28-17	B/D/A	15					15
28-18	C/D/A/Inst	12					12
28-19	B/D/A	10				4	6
28-20	A	14				10	4
28-21	A	37					37
28-22	D	6		3			3
32-1	D/A	5	2			3	
32-3	D	9	1	2		2	4
32-4	A/D	14				2	12
32-8	A	30				6	24
36-1	D	22				4	18
36-3	D	6	3			3	
36-4	D/A	3	3				
36-5	A	4	4				
36-6	A	6	2	4			
36-7	A	47				7	40
36-8	A	47				1	46
36-9	A	31		1	2	14	14
36-10	A	48					48
36-11	A	48					48
36-12	A	48					48
36-13	E/A	17				2	15
36-14	D	16			5	5	6
36-15	D/A	35					35
36-16	A	47				7	40
36-17	A	47				7	40
38-18	A	31		1	2	14	14
36-20	A	34			2	2	30
36-52	A	52					52
40-56	A	85					85
40-63							
20-A48							
20-A9							
32-5							
32-6							
32-17							

Insert arrangements

Front face of pin insert or rear of socket insert illustrated



		Front of socket insert	Front of socket insert			
Insert arrangement	10S-2	10SL-3	10SL-4	12S-3	12S-4	12-5
Service rating	A	A	A	A	A	D
Number of contacts	1	3	2	2	1	1
Contact size	16	16	16	16	16	12
Premating contact	-	C	-	-	-	-

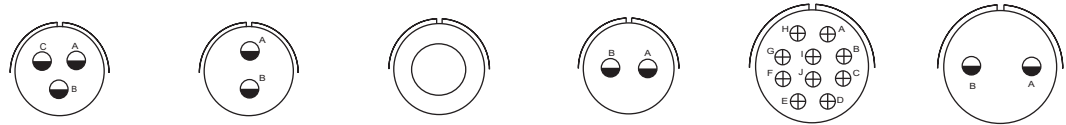
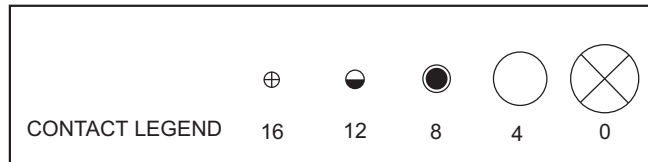
Insert arrangement	14S-2	14S-4	14S-5	14S-6	14S-7	14S-9
Service rating	Inst.	D	Inst.	Inst.	A	A
Number of contacts	4	1	5	6	3	2
Contact size	16	16	16	16	16	16
Premating contact	-	-	-	-	B	-

	100° rotation of 14S-2	100° rotation of 14S-7				
Insert arrangement	14S-10	14S-12	14-3	16S-1	16S-3	16S-4
Service rating	Inst.	A	A	A	B	D
Number of contacts	4	3	1	7	1	2
Contact size	16	16	8	16	16	16
Premating contact	-	B	-	G	-	-

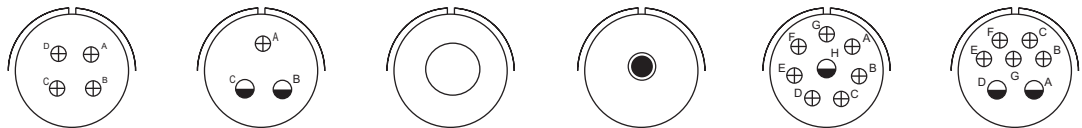
Insert arrangement	16S-5	16S-6	16S-8	16-2	16-7	16-9
Service rating	A	A	A	E	A	A
Number of contacts	3	3	5	1	1 2	2 2
Contact size	16	16	16	12	8 16	12 16
Premating contact	A	B	E	-	C	-

Insert arrangements

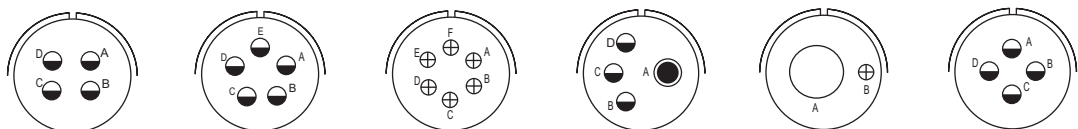
Front face of pin insert or rear of socket insert illustrated



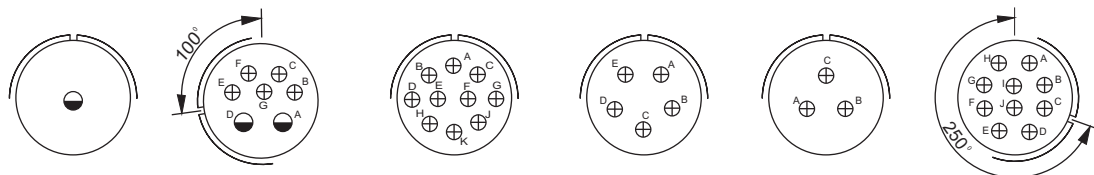
Insert arrangement	16-10	16-11	16-12	16-13	18-1	18-3
Service rating	A	A	A	A	B,C,F,G=A; Bal.=Inst.	D
Number of contacts	3	2	1	2	10	2
Contact size	12	12	4	12	16	12
Premating contact	B	-	-	-	-	-



Insert arrangement	18-4	18-5	18-6	18-7	18-8	18-9
Service rating	D	D	D	B	A	Inst.
Number of contacts	4	2 1	1	1	1 7	2 5
Contact size	16	12 16	4	8	12 16	12 16
Premating contact	A	C	-	-	H	-



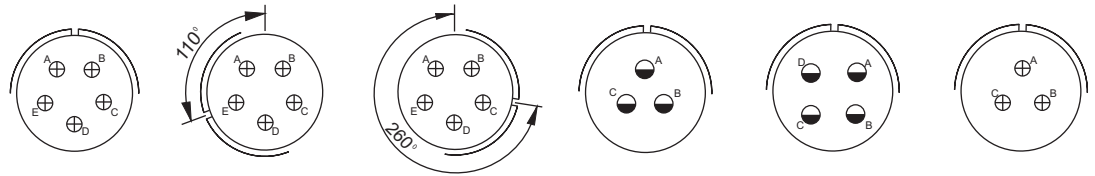
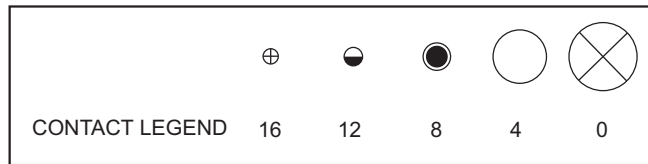
Insert arrangement	18-10	18-11	18-12	18-13	18-14	18-15
Service rating	A	A	A	A	A	A
Number of contacts	4	5	6	1 3	1 1	4
Contact size	12	12	16	8 12	4 16	12
Premating contact	D	E	C or D	A	-	-



Insert arrangement	18-16	18-17	18-19	18-20	18-22	18-24
Service rating	C	Inst.	A	A	D	B,C,F,G=A; Bal.=Inst.
Number of contacts	1	2 5	10	5	3	10
Contact size	12	12 16	16	16	16	16
Premating contact	-	-	K	D	C	-

Insert arrangements

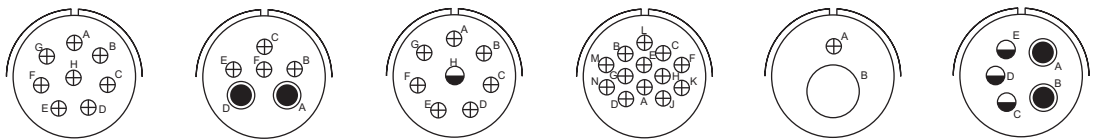
Front face of pin insert or rear of socket insert illustrated



110° rotation of 18-20

260° rotation of 18-20

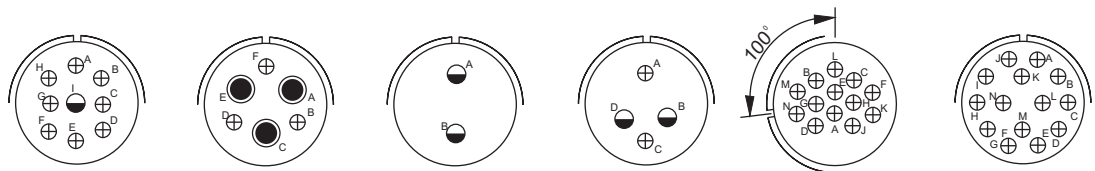
Insert arrangement	18-29	18-30	18-31	20-3	20-4	20-6
Service rating	A	A	A	D	D	D
Number of contacts	5	5	5	4	4	3
Contact size	16	16	16	12	12	16
Premating contact	D	C	C	A	C or D	A



Insert arrangement	20-7	20-8	20-9	20-11	20-12	20-14
Service rating	A,B,H,G=D;C,D,E,F=A	Inst.	H=D;Bal.=A	Inst.	A	A
Number of contacts	8	2 4	1 7	13	1 1	2 3
Contact size	16	8 16	12 16	16	4 16	8 12
Premating contact	A	-	H	-	-	D



Insert arrangement	20-15	20-16	20-17	20-18	20-19	20-20
Service rating	A	A	A	A	A	A
Number of contacts	7	2 7	5 1	3 6	3	1 3
Contact size	12	12 16	12 16	12 16	8	4 12
Premating contact	A or D	E	E or F	D	C	A

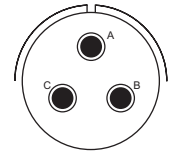
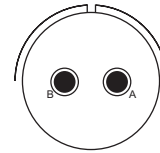
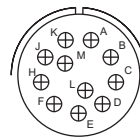
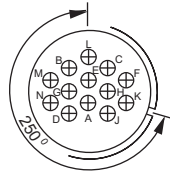
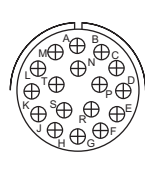
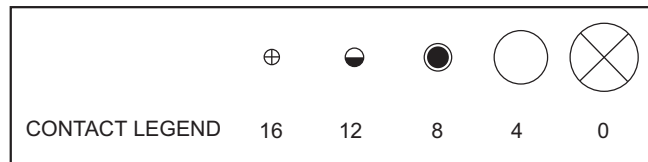


100° rotation of 20-11

Insert arrangement	20-21	20-22	20-23	20-24	20-25	20-27
Service rating	A	A	A	A	Inst.	A
Number of contacts	1 8	3 3	2	2 2	13	14
Contact size	12 16	8 16	8	8 16	16	16
Premating contact	1	-	-	-	-	M

Insert arrangements

Front face of pin insert or rear of socket insert illustrated



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

20-29
A
17
16
G

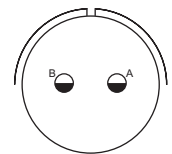
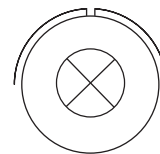
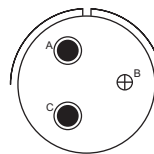
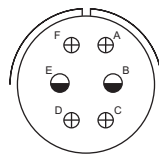
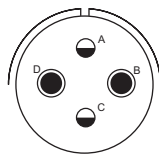
250° rotation
of 20-11

20-30
Inst.
13
16
-

20-33
A
11
16
E

22-1
D
2
8
-

22-2
D
3
8
A



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

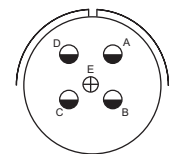
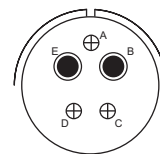
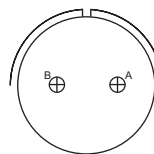
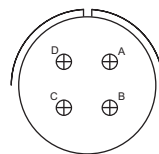
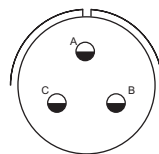
22-4
A
2 2
8 12
C

22-5
D
2 4
12 16
D

22-6
D
2 1
8 16
B

22-7
E
1
0
-

22-8
E
2
12
-



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

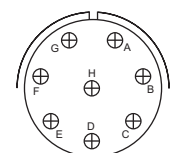
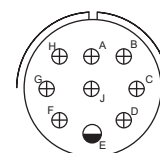
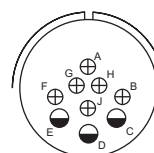
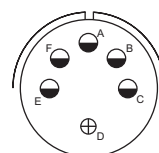
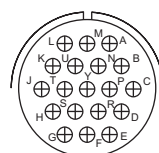
22-9
E
3
12
A

22-10
E
4
16
C

22-11
B
2
16
-

22-12
D
2 3
8 16
A

22-13
E=D; A, B, C, D=A
4 1
12 16
E



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

22-14
A
19
16
A

22-15
D=E; A, B, C, E, F=A
5 1
12 16
D

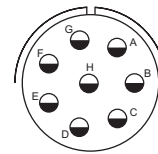
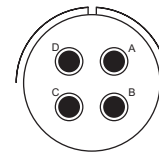
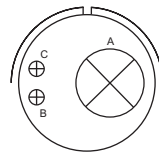
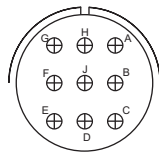
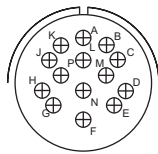
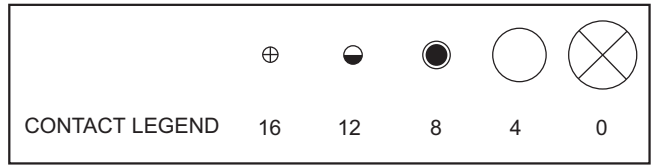
22-16
A
3 6
12 16
D

22-17
A=D; Bal.=A
1 8
12 16
E

22-18
A, B, F, G, H=D; C, D, E=A
8
16
D

Insert arrangements

Front face of pin insert or rear of socket insert illustrated



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

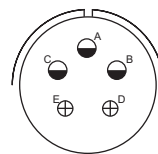
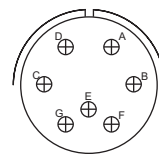
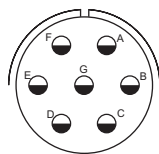
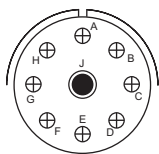
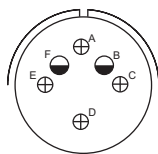
22-19
A
14
16
F

22-20
A
9
16
D

22-21
A
1 2
0 16
-

22-22
A
4
8
C or D

22-23
H=D; Bal.=A
8
12
A or D



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

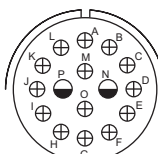
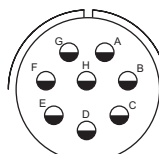
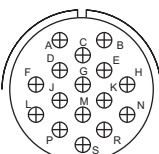
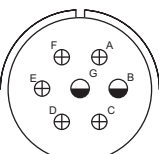
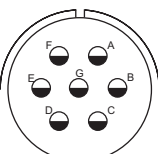
22-24
C, D, E=D; A, B, F=A
2 4
12 16
D

22-27
J=D; Bal.=A
1 8
8 16
-

22-28
A
7
12
G

22-23
A, B, C, D=D; E, F, G=A
7
16
E

22-34
D
3 2
12 16
E



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

24-2
D
7
12
A

24-3
D
2 5
12 16
D

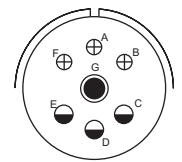
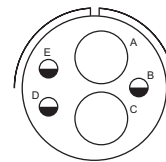
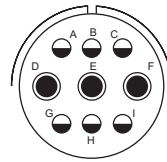
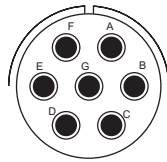
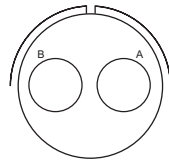
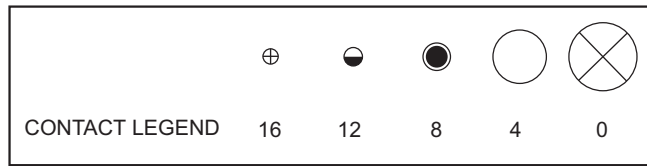
24-5
A
16
16
S

24-6
A, G, H=D; Bal.=A
8
12
D

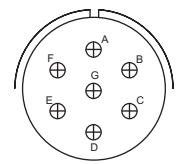
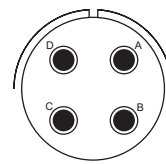
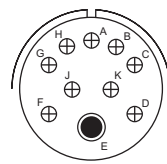
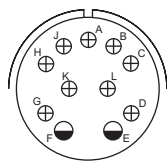
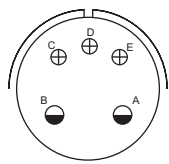
24-7
A
2 14
12 16
G

Insert arrangements

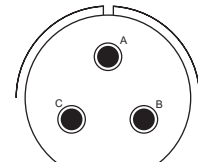
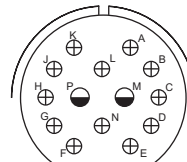
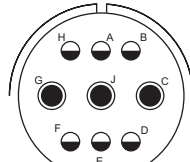
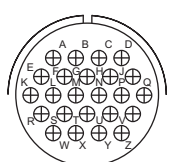
Front face of pin insert or rear of socket insert illustrated



Insert arrangement	24-9	24-10	24-11	24-12	24-16
Service rating	A	A	A	A	A,B,F,G=D; C,D,E=A
Number of contacts	2	7	3 6	2 3	1 3 3
Contact size	4	8	8 12	4 12	8 12 16
Premating contact	-	D or E or G	E	-	G



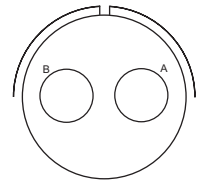
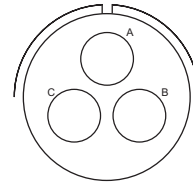
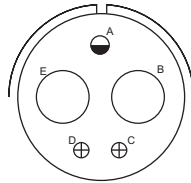
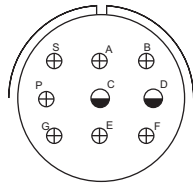
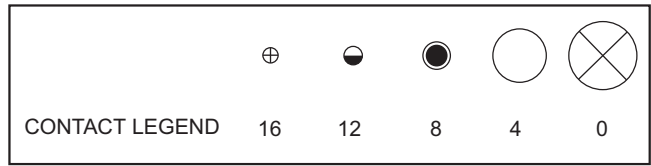
Insert arrangement	24-17	24-20	24-21	24-22	24-27
Service rating	D	D	D	D	E
Number of contacts	2 3	2 9	1 9	4	7
Contact size	12 16	12 16	8 16	8	16
Premating contact	D	A	E	D	D



Insert arrangement	24-28	28-1	28-2	28-3
Service rating	Inst.	A,J,E=D; Bal.=A	D	E
Number of contacts	24	3 6	2 12	3
Contact size	16	8 12	12 16	8
Premating contact	-	E	E	A

Insert arrangements

Front face of pin insert or rear of socket insert illustrated



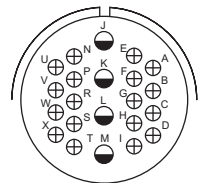
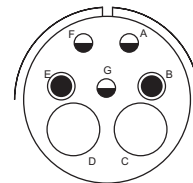
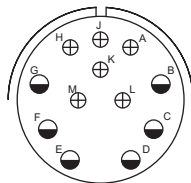
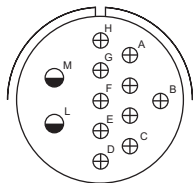
Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

28-4
G,S,P=E;Bal.=D
2 7
12 16
E

28-5
D
2 1 2
4 12 16
-

28-6
D
3
4
A

28-7
D
2
4
-



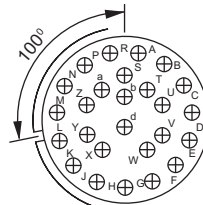
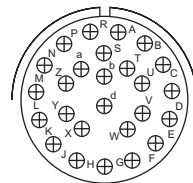
Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

28-8
L,M=E;B=D;Bal.=A
2 10
12 16
D

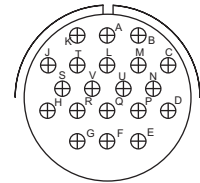
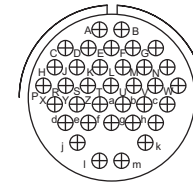
28-9
D
6 6
12 16
E

28-10
G=D;Bal.=A
2 2 3
4 8 12
G

28-11
A
4 18
12 16
M



100° rotation
of 28-12



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

28-12
A
26
16
H

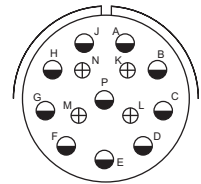
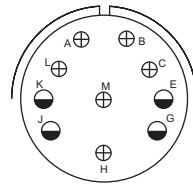
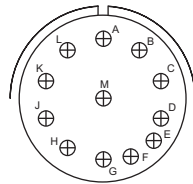
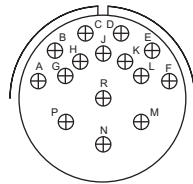
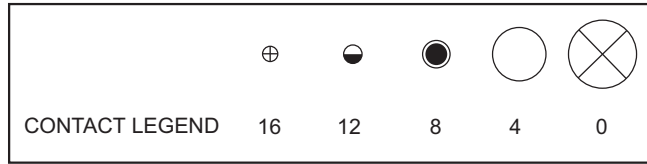
28-13
A
26
16
H

28-15
A
35
16
M

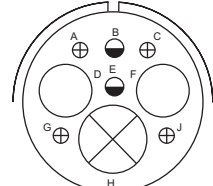
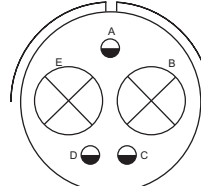
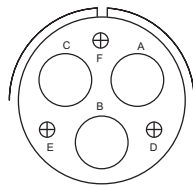
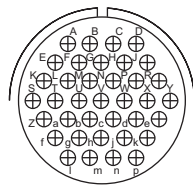
28-16
A
20
16
F

Insert arrangements

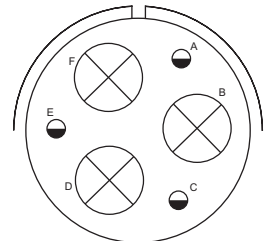
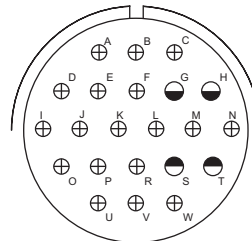
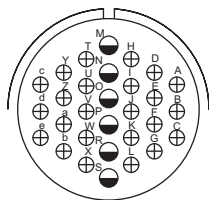
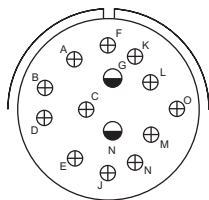
Front face of pin insert or rear of socket insert illustrated



Insert arrangement	28-17	28-18	28-19	28-20
Service rating	R=B;M,N,P=D;A to L=A	M=C;G,H,J,K,L=D;A,B=ABal.=Inst.	H,M=B;A,B=D;Bal.=A	A
Number of contacts	15	12	4 6	10 4
Contact size	16	16	12 16	12 16
Premating contact	N	-	H	E



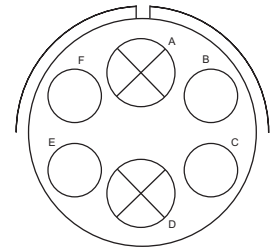
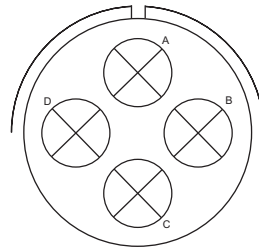
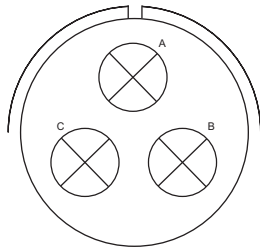
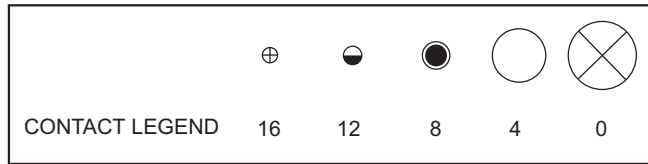
Insert arrangement	28-21	28-22	32-1	32-3
Service rating	A	D	A=E;B,C,D,E=A	D
Number of contacts	37	3 3	2 3	1 2 2 4
Contact size	16	4 16	0 12	0 4 12 16
Premating contact	A	-	-	-



Insert arrangement	32-4	32-8	36-1	36-3
Service rating	F,J,K,N=A;Bal.=D	A	D	D
Number of contacts	2 12	6 24	4 18	3 3
Contact size	12 16	12 16	12 16	0 12
Premating contact	-	S	-	-

Insert arrangements

Front face of pin insert or rear of socket insert illustrated

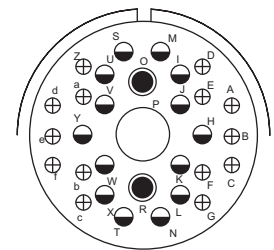
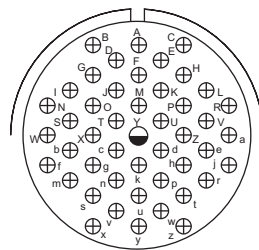
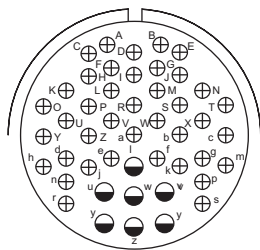


Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

36-4
A=D; B, C=A
3
0
-

36-5
A
4
0
-

36-6
A
2 4
0 4
-

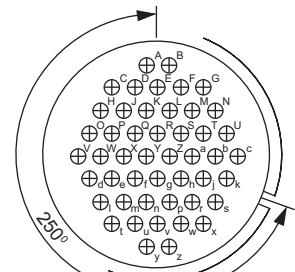
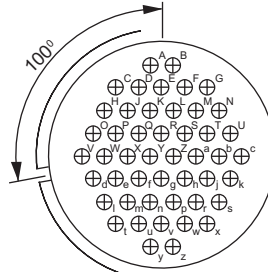
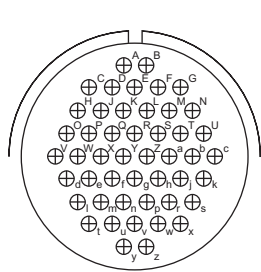


Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

36-7
A
7 40
12 16
x or y

36-8
A
1 46
12 16
Y

36-9
A
1 2 14 14
4 8 12 16
P



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

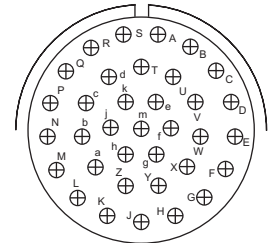
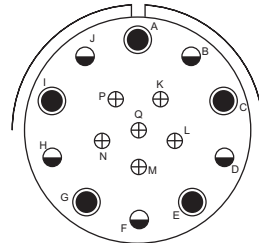
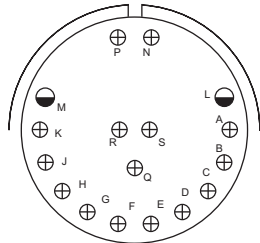
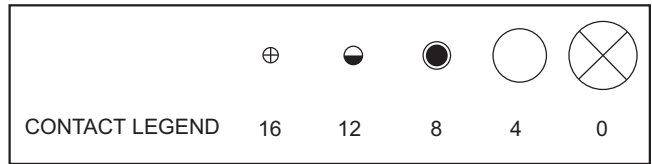
36-10
A
48
16
A

100° rotation
of 36-10
36-11
A
48
16
A

250° rotation
of 36-10
36-12
A
48
16
A

Insert arrangements

Front face of pin insert or rear of socket insert illustrated

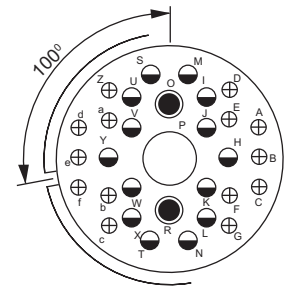
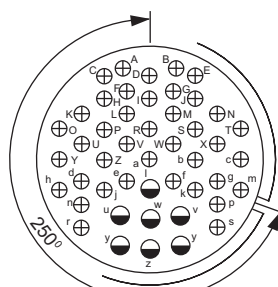
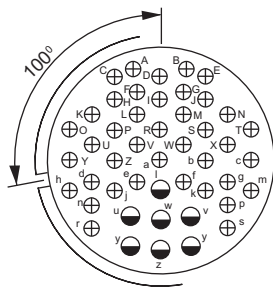


Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

36-13
N,P,Q=E;Bal.=A
2 15
12 16
-

36-14
D
5 5 6
8 12 16
-

36-15
M=D;Bal=A
35
16
J



Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

100° rotation
of 36-7

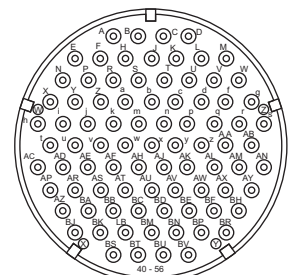
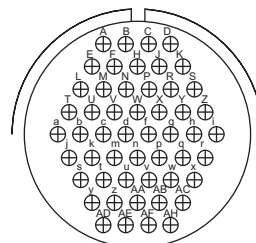
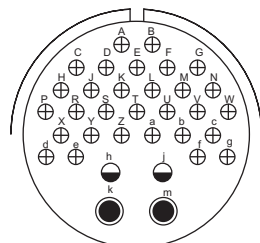
250° rotation
of 36-7

100° rotation
of 36-9

36-16
A
7 40
12 16
x or y

36-17
A
7 40
12 16
x or y

36-18
A
1 2 14 16
4 8 12 16
-



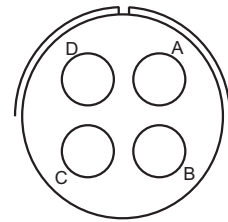
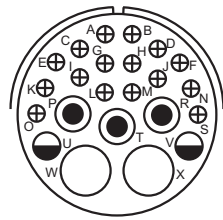
Insert arrangement
Service rating
Number of contacts
Contact size
Premating contact

36-20
A
2 2 30
8 12 16
k

36-52
A
52
16
-

40-56
A
85
16
-

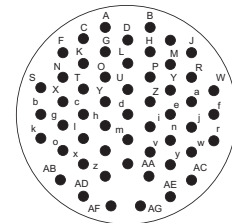
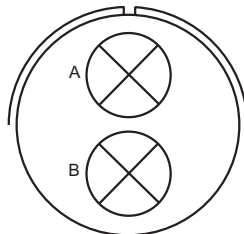
MS / Standard
Insert arrangements



Insert arrangement
Service rating
Number of contacts
Contact size

32-6
A
2 3 2 16
4 8 12 16

32-17
D
4
4

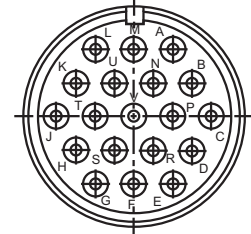
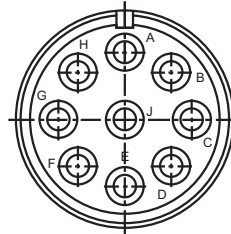
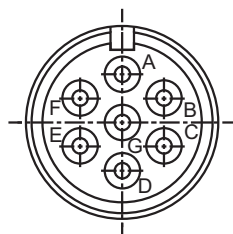


Insert arrangement
Service rating
Number of contacts
Contact size

32-5
D
2
0

32-22
A
54
16
-

MS / Special
Insert arrangements.



Insert arrangement
Service rating
Number of contacts
Contact size

14S - AT
A
7
16

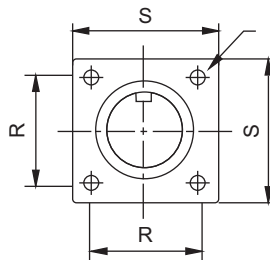
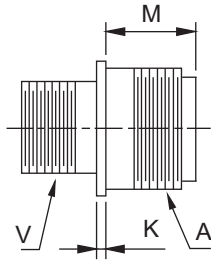
20A - 9
A
9
12

20 A - 48
A
19
16

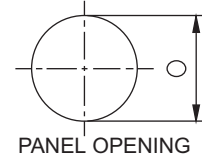
Shell types

Wall mounting receptacle

MS-3100 97-3100 MS-4100 97-4100



MOUNTING HOLES
 4.39 DIA. FOR SIZE 32 AND 36
 3.73 DIA. FOR SIZE 24 AND 28
 3.05 DIA. FOR ALL OTHER SIZES
 4.55 DIA. FOR 40 SIZE

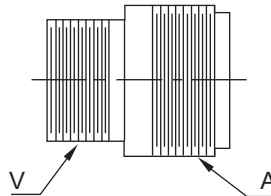


All dimensions are in mm

Connector Size	A Thread in inches	K	M	O	R	S	V Thread in inches
10SL	5/8-24 UNEF	1.98	14.29	20.62	18.25	25.68	5/8-24 NEF
12S	3/4-20 UNEF	1.98	14.29	20.62	20.64	27.76	11/16-24NEF
12	3/4-20 UNEF	1.98	19.05	20.62	20.64	27.76	11/16-24NEF
14S	7/8-20 UNEF	1.98	14.29	23.82	23.02	30.43	3/4-20 UNEF
14	7/8-20 UNEF	1.98	19.05	23.82	23.02	30.43	3/4-20 UNEF
16S	1-20 UNEF	1.98	14.29	26.97	24.61	32.82	7/8-20 UNEF
16	1-20 UNEF	3.17	19.05	26.97	24.61	32.82	7/8-20 UNEF
18	1 1/8-18 UNEF	3.17	19.05	30.17	26.99	35.07	1-20 UNEF
20	1 1/4-18 UNEF	3.17	19.05	33.32	29.37	38.38	1 1/8-18 NS
22	1 3/8-18 UNEF	3.17	19.05	36.52	31.75	41.55	1 1/4-18 NEF
24	1 1/2-18 UNEF	3.17	20.64	39.67	34.92	44.70	1 3/8-18 NEF
28	1 3/4-18 UNS	3.17	20.64	46.02	39.69	51.08	1 5/8-18 NEF
32	2.00-18 UNS	3.17	22.25	53.0	44.45	57.15	1 29/32-18 NS
36	2 1/4-16 UN	3.17	22.22	58.72	49.21	63.78	2 1/16-20 UNS
40	2 1/2-16 UN	3.45	22.22	62.00	55.58	69.85	2 5/16-16 UN

Cable connecting receptacle

MS-3101 97-3101 MS-4101 97-4101



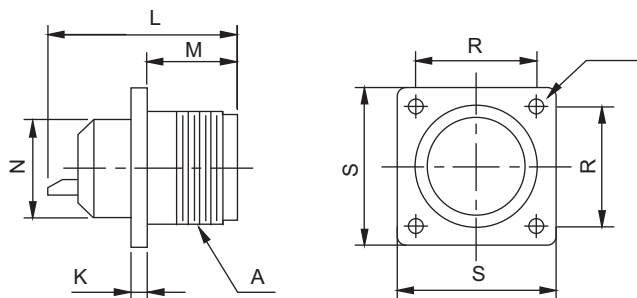
All dimensions are in mm

Connector Size	A Thread in inches	V Thread in inches
10SL	5/8-24 UNEF	5/8-24 NEF
12S	3/4-20 UNEF	11/16-24 NEF
12	3/4-20 UNEF	11/16-24 NEF
14S	7/8-20 UNEF	3/4-20 UNEF
14	7/8-20 UNEF	3/4-20 UNEF
16S	1-20 UNEF	7/8-20 UNEF
16	1-20 UNEF	7/8-20 UNEF
18	1 1/8-18 UNEF	1-20 UNEF
20	1 1/4-18 UNEF	1 1/8-18 NS
22	1 3/8-18 UNEF	1 1/4-18 NEF
24	1 1/2-18 UNEF	1 3/8-18 NEF
28	1 3/4-18 UNS	1 5/8-18 NEF
32	2-18 UNS	1 29/32-18 NS
36	2 1/4-16 UN	2 1/16-20 UNS
40	2 1/2-16 UN	2 5/16-16 UN

Shell types

Box mounting receptacle

MS-3102 97-3102 MS-4102 97-4102



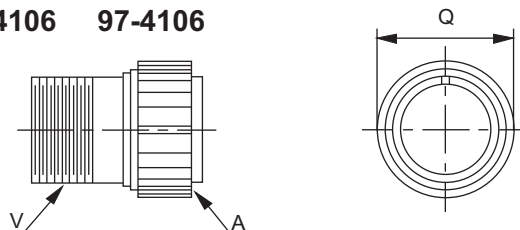
MOUNTING HOLES
 4.39 DIA. FOR SIZE 32 AND 36
 3.73 DIA. FOR SIZE 24 AND 28
 3.05 DIA. FOR ALL OTHER SIZES
 4.55 FOR 40 SIZE

All dimensions are in mm

Connector Size	A Thread in inches	K	L	M	N	R	S
10SL	5/8-24 UNEF	1.98	30.18	13.89	15.87	18.25	25.68
12S	3/4-20 UNEF	1.98	30.18	14.28	17.46	20.64	28.04
12	3/4-20 UNEF	1.98	41.28	19.05	17.46	20.64	28.04
14S	7/8-20 UNEF	1.98	30.18	14.28	19.05	23.02	30.43
14	7/8-20 UNEF	1.98	41.28	19.05	19.05	23.02	30.43
16S	1-20 UNEF	1.98	30.18	14.28	22.22	24.61	32.82
16	1-20 UNEF	3.17	41.28	19.05	22.22	24.61	32.82
18	1 1/8-18 UNEF	3.17	49.28	19.05	25.40	26.99	35.08
20	1 1/4-18 UNEF	3.17	49.28	19.05	28.57	29.37	38.38
22	1 3/8-18 UNEF	3.17	49.28	19.05	31.75	31.75	41.55
24	1 1/2-18 UNEF	3.17	49.28	20.64	34.92	34.92	44.73
28	1 3/4-18 UNS	3.17	49.28	20.64	41.27	39.69	51.08
32	2-18 UNS	3.17	49.28	22.22	48.26	44.45	57.15
36	2 1/4-16 UN	3.17	49.28	22.22	53.97	49.21	63.78
40	2 1/2-16 UN	3.45	49.28	22.22	58.25	55.58	69.85

Straight plug

MS-3106 97-3106 MS-4106 97-4106



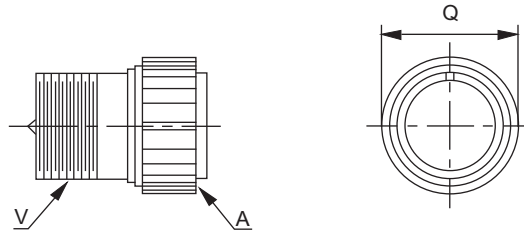
All dimensions are in mm

Connector Size	A Thread in inches	Q max	V Thread in inches
10SL	5/8-24 UNEF	19.05	5/8-24 NEF
12S	3/4-20 UNEF	19.84	11/16-24NEF
12	3/4-20 UNEF	19.84	11/16-24NEF
14S	7/8-20 UNEF	22.22	3/4-20 UNEF
14	7/8-20 UNEF	22.22	3/4-20 UNEF
16S	1-20 UNEF	25.40	7/8-20 UNEF
16	1-20 UNEF	25.40	7/8-20 UNEF
18	1 1/8-18 UNEF	28.57	1-20 UNEF
20	1 1/4-18 UNEF	31.75	1 1/8-18 NS
22	1 3/8-18 UNEF	34.92	1 1/4-18 NEF
24	1 1/2-18 UNEF	38.10	1 3/8-18 NEF
28	1 3/4-18 UNS	44.45	1 5/8-18 NEF
32	2-18 UNS	51.75	1 29/32-18 NS
36	2 1/4-16 UN	57.15	2 1/16-20 UNS
40	2 1/2-16 UN	63.50	2 5/16-20 UN

Note - Both versions, straight and diamond knurling available on coupling ring. For details, contact factory.

Shell types Right angle plug

MS-3108 97-3108 MS-4108 97-4108



All dimensions are in mm

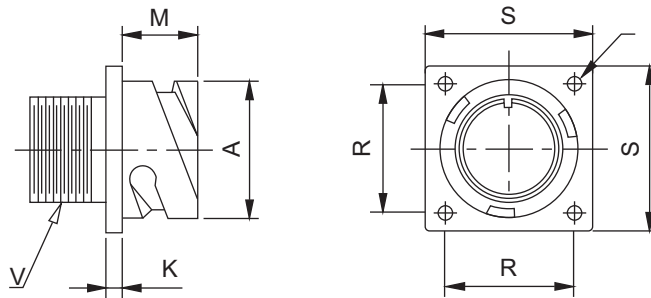
Connector Size	A Thread in inches	Q max	V Thread in inches
10SL	5/8-24 UNEF	19.05	5/8-24 NEF
12S	3/4-20 UNEF	19.84	11/16-24 NEF
12	3/4-20 UNEF	19.84	11/16-24 NEF
14S	7/8-20 UNEF	22.22	3/4-20 UNEF
14	7/8-20 UNEF	22.22	3/4-20 UNEF
16S	1-20 UNEF	25.40	7/8-20 UNEF
16	1-20 UNEF	25.40	7/8-20 UNEF
18	1 1/8-18 UNEF	28.57	1-20 UNEF
20	1 1/4-18 UNEF	31.75	1 1/8-18 NS
22	1 3/8-18 UNEF	34.92	1 1/4-18 NEF
24	1 1/2-18 UNEF	38.10	1 3/8-18 NEF
28	1 3/4-18 UNS	44.45	1 5/8-18 NEF
32	2-18 UNS	51.75	1 29/32-18 NS
36	2 1/4-16 NS	57.15	2 1/16-20 UNS
40	2 1/2-16 UN	63.50	2 5/16-16 UN

Note - Both versions, straight and diamond knurling available on coupling ring. For details, contact factory.

Shell types

**Box mounting receptacle
97B-3100 97B-4100**

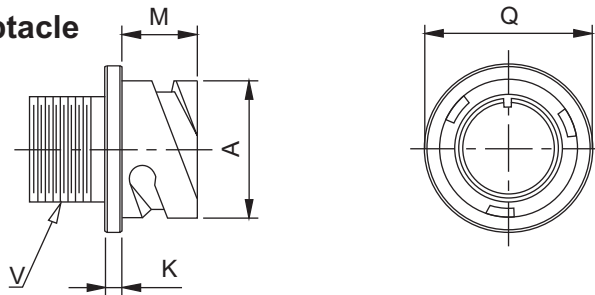
MOUNTING HOLES
4.39 DIA. FOR SIZE 32, 36 AND 40
3.73 DIA. FOR SIZE 24 AND 28
3.05 DIA. FOR ALL OTHER SIZES



All dimensions are in mm

Connector Size	A	K	M	R	S	V Thread in inches
10SL	18.2	2.8	14.2	18.2	25.4	5/8-24 NEF
14S	24.6	3.2	14.2	23.0	30.0	3/4-20 UNEF
16S	27.4	3.2	14.2	24.6	32.5	7/8-20 UNEF
16	27.4	3.2	19.0	24.6	32.5	7/8-20 UNEF
18	30.8	4.0	19.0	27.0	35.0	1-20 UNEF
20	34.2	4.0	19.0	29.4	38.0	1 1/8-24 NS
22	37.4	4.0	19.0	31.8	41.0	1 1/4-18 NEF
24	40.9	4.0	20.6	34.9	44.5	1 3/8-18 NEF
28	46.7	4.0	20.6	39.7	50.8	1 5/8-18 NEF
32	53.4	4.0	22.2	44.5	57.0	1 29/32-18 NS
36	59.6	4.0	22.2	49.2	63.5	2 1/16-20 UNS
40	65.5	4.0	22.2	55.5	69.85	2 5/16-16 UN

**Cable connecting receptacle
97B-3101 97B-4101**



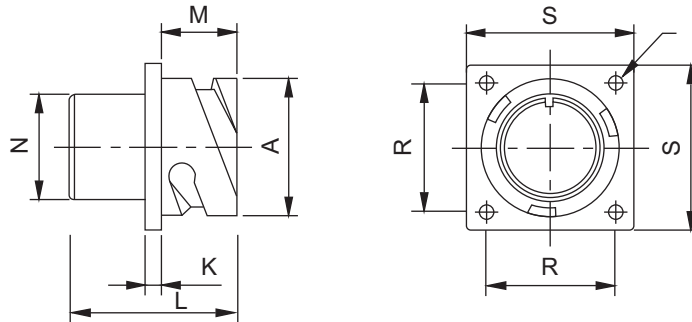
All dimensions are in mm

Connector Size	A	K	M	V Thread in inches
10SL	18.2	2.8	14.2	5/8-24 NEF
14S	24.6	3.2	14.2	3/4-20 UNEF
16S	27.4	3.2	14.2	7/8-20 UNEF
16	27.4	3.2	19.0	7/8-20 UNEF
18	30.8	4.0	19.0	1-20 UNEF
20	34.2	4.0	19.0	1 1/8-24 NS
22	37.4	4.0	19.0	1 1/4-18 NEF
24	40.9	4.0	20.6	1 3/8-18 NEF
28	46.7	4.0	20.6	1 5/8-18 NEF
32	53.4	4.0	22.2	1 29/32-18 NS
36	59.6	4.0	22.2	2 1/16-20 UNS
40	65.5	4.0	22.2	2 5/16-16 UNS

Shell types

Front box mounting receptacle
97B-3102 97B-4102

MOUNTING HOLES
4.39 DIA. FOR SIZE 32 ,36 AND 40
3.73 DIA. FOR SIZE 24 AND 28
3.05 DIA. FOR ALL OTHER SIZES

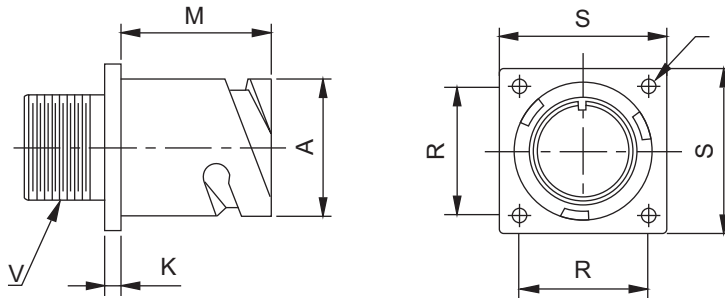


All dimensions are in mm

Connector Size	A	K	M	R	S	N max	L max
10SL	18.2	2.8	14.2	18.2	25.4	15.9	24.7
14S	24.6	3.2	14.2	23.0	30.0	19.2	24.7
16S	27.4	3.2	14.2	24.6	32.5	22.4	24.7
16	27.4	3.2	19.0	24.6	32.5	22.4	33.8
18	30.8	4.0	19.0	27.0	35.0	25.6	34.5
20	34.2	4.0	19.0	29.4	38.0	29.0	34.5
22	37.4	4.0	19.0	31.8	41.0	32.2	34.5
24	40.9	4.0	20.6	34.9	44.5	35.3	35.7
28	46.7	4.0	20.6	39.7	50.8	41.4	35.7
32	53.4	4.0	22.2	44.5	57.0	47.8	37.3
36	59.6	4.0	22.2	49.2	63.5	52.4	37.3
40	65.5	4.0	22.2	55.5	69.85	58.70	37.3

Back box mounting receptacle
97B-3103 97B-4103

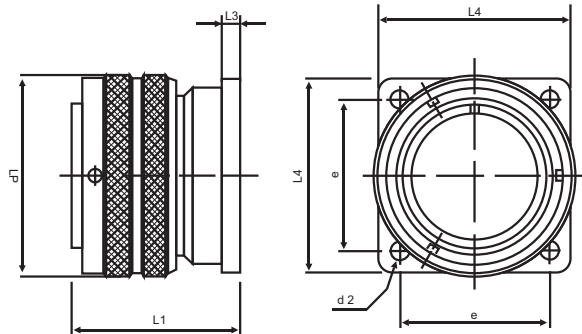
MOUNTING HOLES
4.39 DIA. FOR SIZE 32 , 36 AND 40
3.73 DIA. FOR SIZE 24 AND 28
3.05 DIA. FOR ALL OTHER SIZES



All dimensions are in mm

Connector Size	A	K	M	R	S	V Thread in inches
10SL	18.2	2.8	18.2	18.2	25.4	5/8-24 NEF
14S	24.6	3.2	18.2	23.0	30.0	3/4-20 UNEF
16S	27.4	3.2	18.2	24.6	32.5	7/8-20 UNEF
16	27.4	3.2	21.5	24.6	32.5	7/8-20 UNEF
18	30.8	4.0	23.05	27.0	35.0	1-20 UNEF
20	34.2	4.0	23.05	29.4	38.0	1 1/8-24 NS
22	37.4	4.0	23.05	31.8	41.0	1 1/4-18 NEF
24	40.9	4.0	23.05	34.9	44.5	1 3/8-18 NEF
28	46.7	4.0	24.05	39.7	50.8	1 5/8-18 NEF
32	53.4	4.0	24.05	44.5	57.0	1 29/32-18 NS
36	59.6	4.0	24.05	49.2	63.5	2 1/16-20 UNS
40	65.5	4.0	24.05	55.5	69.85	2 5/16-16 UN-2A

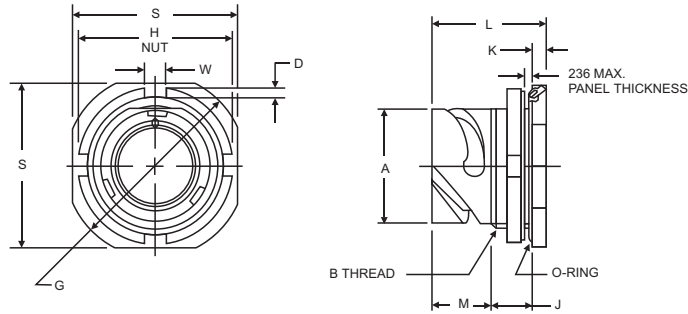
Shell Type
 Panel Mounting Plug Connector
 97B - 3110A 97B-4110A



All dimensions are in mm

Shell Size	d ₁ Max	d ₂ H13	e ±0.1	l ₁ ~	l ₃ ±0.2	l ₄ ±0.3
10SL	22.8	3.2	18.2	28.1	2.8	25.4
14S	29.2	3.2	23	28.1	3.2	30
16S	32	3.2	24.6	28.1	3.2	32.5
16	32	3.2	24.6	37.6	3.2	32.5
18	36.5	3.2	27	38.6	4	35
20	39.9	3.2	29.4	38.6	4	38
22	43.1	3.2	31.8	38.6	4	41
24	46.6	3.7	34.9	41	4	44.5
28	53.4	3.7	39.7	41.8	4	50.8
32	60.1	4.3	44.5	45	4	57
36	66.3	4.3	49.2	45	4	63.5
40	72.5	4.3	55.5	45	4	69.9

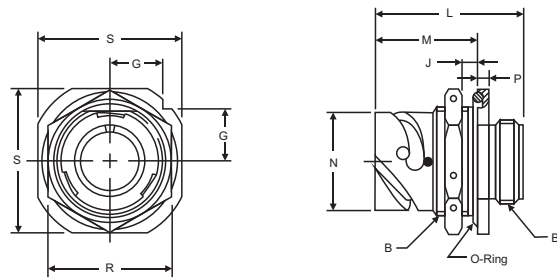
Shell Type
Jam Nut Receptacle
97B - 3107R 97B-4107R



All dimensions are in mm

Shell Size	A Ref.	D Ref.	G Ref.	H Ref.	J Ref.	K Ref.	L Ref.	M Ref.	S ± 0.3	W Ref.
10SL	18.2	2.5	35.0	31.5	13.5	3.2	29.2	12.5	31.8	5.0
14S	24.6	2.5	41.3	37.9	13.5	3.2	29.2	12.5	38.1	6.0
16S	27.4	2.5	44.4	41.0	13.5	3.2	29.2	12.5	41.2	6.0
16	27.4	2.5	44.4	41.0	13.5	3.2	37.7	21.0	41.2	6.0
18	30.8	3.0	48.2	44.8	15.0	4.0	40.0	21.0	45.0	7.0
20	34.1	3.0	52.4	49.0	15.0	4.0	40.0	21.0	49.2	7.0
22	37.3	3.0	55.5	52.2	15.0	4.0	40.0	21.0	52.4	7.0
24	40.8	3.0	59.0	55.0	15.0	4.0	40.0	21.0	55.2	7.0
28	46.7	3.0	66.0	62.0	15.0	4.0	40.0	21.0	62.2	7.0
32	53.3	3.0	72.0	68.0	15.0	4.0	40.0	21.0	68.2	7.0
36	59.6	3.0	80.0	75.0	15.0	4.0	40.0	21.0	75.2	8.0

Shell Type
Jam Nut Receptacle
97B - 3107 97B-4107



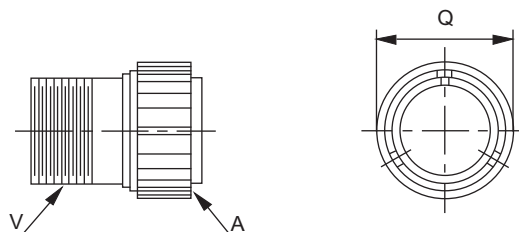
All dimensions are in mm

Shell Size	G ± 0.3	J Wall Thickness		L ± 0.3	M ± 0.3	N +0.00 -0.15	P ± 0.2	R ± 0.4	S ± 0.3
		Min.	Max.						
10SL	11.2	2.4	5.2	36.2	24.5	18.2	4.0	27	31.8
14S	14.6	2.4	7.5	38.9	26.8	24.6	4.8	33	41.3
16S	15.7	2.4	7.5	38.9	26.8	27.4	4.8	38	44.4
16	15.7	2.4	7.5	48.5	32.1	27.4	4.8	38	44.4
18	16.8	2.4	9.0	49.3	33.7	30.8	4.8	40	47.6
20	18.0	2.4	9.1	49.3	33.7	34.2	4.8	44	50.8
22	20.0	2.4	9.1	49.3	33.7	37.4	4.8	51	57.2
24	20.2	2.4	9.1	49.6	33.7	40.9	4.8	51	57.2
28	22.5	2.4	10.0	51.9	35.2	46.7	5.6	56	63.5
32	24.7	2.4	10.0	51.9	35.2	53.4	5.6	62	69.8
36	26.9	2.4	8.3	51.9	35.2	59.6	5.6	71	76.2
40	29.6	2.4	8.3	51.9	35.2	65.5	5.6	76	82.5

Shell types

Straight plug

97B-3106 97B-4106

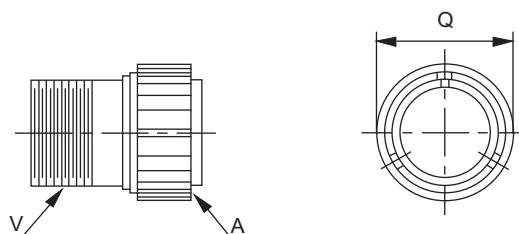


All dimensions are in mm

Connector Size	Q max	V Thread in inches
10SL	22.8	5/8-24 NEF
14S	29.2	3/4-20 UNEF
16S	32.0	7/8-20 UNEF
16	32.0	7/8-20 UNEF
18	36.5	1-20 UNEF
20	39.9	1 1/8-18 NS
22	43.1	1 1/4-18 NEF
24	46.6	1 3/8-18 NEF
28	53.4	1 5/8-18 NEF
32	60.1	1 29/32-18 NS
36	66.3	2 1/16-20 UNS
40	69.10	2 5/16-16 UN

Right angle plug

97B-3108 97B-4108



All dimensions are in mm

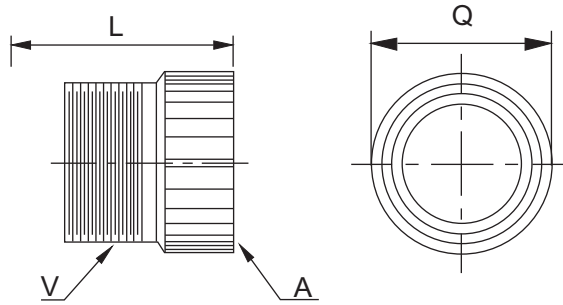
Connector Size	Q max	V Thread in inches
10SL	22.8	5/8-24 NEF
14S	29.2	3/4-20 UNEF
16S	32.0	7/8-20 UNEF
16	32.0	7/8-20 UNEF
18	36.5	1-20 UNEF
20	39.9	1 1/8-18 NS
22	43.1	1 1/4-18 NEF
24	46.6	1 3/8-18 NEF
28	53.4	1 5/8-18 NEF
32	60.1	1 29/32-18 NS
36	66.3	2 1/16-20 UNS
40	69.10	2 5/16-16 UN

Note - Both versions, straight and diamond knurling available on coupling ring. For details, contact factory.

Back accessories

Solid backshell without grommet and sleeve

Class A

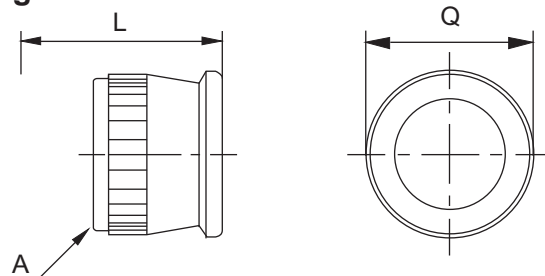


All dimensions are in mm

Connector Size	A Thread in inches	L max for MS/97	L max for 97B	Q max	V Thread in inches
10SL	5/8-24 NEF	32.54	37.60	19.05	5/8-24 UNEF
12S	11/16-24 NEF	37.31	---	19.84	5/8-24 UNEF
12	11/16-24 NEF	46.83	---	19.84	5/8-24 UNEF
14S	3/4-20 UNEF	36.51	37.64	22.22	3/4-20 UNEF
14	3/4-20 UNEF	46.83	---	22.22	3/4-20 UNEF
16S	7/8-20 UNEF	37.70	38.83	25.40	7/8-20 UNEF
16	7/8-20 UNEF	48.02	48.00	25.40	7/8-20 UNEF
18	1-20 UNEF	50.80	51.58	28.57	1-20 UNEF
20	1 1/8-18 NS	53.97	54.75	31.75	1 3/16-18 UNEF
22	1 1/4-18 NEF	53.97	54.75	34.92	1 3/16-18 UNEF
24	1 3/8-18 NEF	57.15	57.94	38.10	1 7/16-18 UNEF
28	1 5/8-18 NEF	57.15	57.94	44.45	1 7/16-18 UNEF
32	1 29/32-18 NS	59.0	59.78	51.75	1 3/4-18 UNS
36	2 1/16-20 UNS	60.32	61.13	57.15	2-18 UNS
40	2 5/16-16 UN	71.80	80.00	63.50	2 1/4 - 16 UN

Solid backshell with grommet and sleeve

Class R



All dimensions are in mm

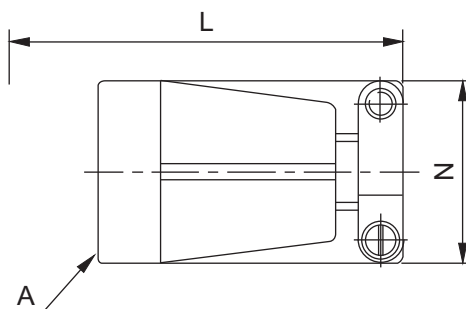
Connector Size	A Thread class 2B in inches	L max for MS/97	L max for 97B	Q max
10SL	5/8-24 NEF	47	46.00	21.50
12S	11/16-24 NEF	47	---	20.35
12	11/16-24 NEF	55	---	20.35
14S	3/4-20 UNEF	47	46.40	23.40
14	3/4-20 UNEF	55	---	23.40
16S	7/8-20 UNEF	47	46.40	26.71
16	7/8-20 UNEF	55	55.40	26.71
18	1-20 UNEF	57	57.40	29.50
20	1 1/8-18 NS	57	57.40	35.70
22	1 1/4-18 NEF	57	57.40	35.85
24	1 3/8-18 NEF	57	57.40	44.40
28	1 5/8-18 NEF	57	57.40	45.08
32	1 29/32-18 NS	58.25	58.10	52.36
36	2 1/16-20 UNS	58.25	58.10	56.81
40	2 5/16-16 UN	58.25	68.00	64.50

Note - Both versions, straight and diamond knurling available on back accessories. For details, contact factory.

Back accessories

Strain relief backshell with grommet and sleeve

Class E and F

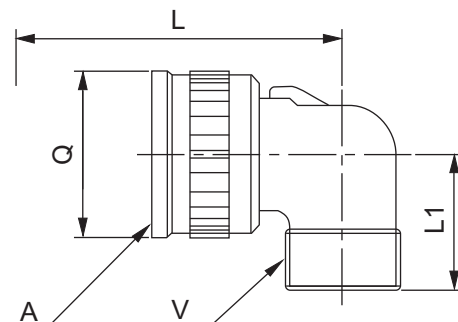


All dimensions are in mm

Connector Size	A Thread class 2B in inches	L max for MS/97	L max for 97B	N max
10SL	5/8-24 NEF	54.07	59.10	21.97
12S	11/16-24 NEF	54.07	---	21.97
14S	3/4-20 UNEF	55.90	61.34	25.15
16S	7/8-20 UNEF	55.90	62.86	28.45
16	7/8-20 UNEF	64.41		28.45
18	1-20 UNEF	65.94	71.10	30.76
20	1 1/8-18 NS	67.41	72.55	37.29
22	1 1/4-18 NEF	67.41	72.55	37.29
24	1 3/8-18 NEF	73.28	76.82	44.45
28	1 5/8-18 NEF	73.28	77.82	44.45
32	1 29/32-18 NS	74.75		52.22
36	2 1/26-20 UNS	74.75	77.64	57.15
40	2 5/16-16 UN	86.0	125.0	67.10

Right angle backshell with or without grommet

Class A, F and R



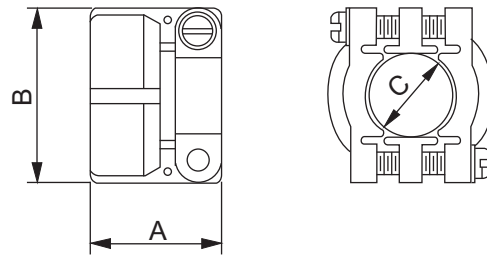
All dimensions are in mm

Connector Size	A Thread class 2B in inches	L max for MS/97	L max for 97B	L1 max	Q max	V Thread in inches
10SL	5/8-24 NEF	37.60	45.00	25.00	22.22	5/8-24 UNEF
12S	11/16-24 NEF	37.80	---	25.00	25.40	5/8-24 UNEF
12	11/16-24 NEF	47.30	---	25.00	25.40	5/8-24 UNEF
14S	3/4-20 UNEF	39.40	47.00	27.00	28.57	3/4-20 UNEF
14	3/4-20 UNEF	48.90	---	27.00	28.57	3/4-20 UNEF
16S	7/8-20 UNEF	42.60	48.00	28.00	31.75	7/8-20 UNEF
16	7/8-20 UNEF	52.10	57.00	28.00	31.75	7/8-20 UNEF
18	1-20 UNEF	53.70	58.00	31.00	34.13	1-20 UNEF
20	1 1/8-18 NS	58.80	61.00	34.00	37.30	1 3/16-18 UNEF
22	1 1/4-18 NEF	58.80	61.00	34.00	40.48	1 3/16-18 UNEF
24	1 3/8-18 NEF	63.60	66.00	37.00	43.66	1 7/16-18 UNEF
28	1 5/8-18 NEF	63.60	66.00	39.00	50.00	1 7/16-18 UNEF
32	1 29/32-18 NS	69.60	72.00	45.00	56.50	1 3/4-18 UNS
36	2 1/26-20 UNS	72.80	75.00	48.00	62.71	2-18 UNS
40	2 5/16-26 UN	76.00	78.00	55.00	62.71	2 1/4 -16 UN

Note - Both versions, straight and diamond knurling available on back accessories. For details, contact factory.

Back accessories**Cable clamp****MS-3057**

Use MS-3420 sleeves

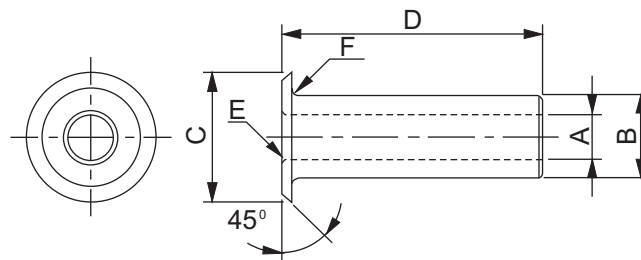


All dimensions are in mm

Part number	Shell size	Max OD of cable	A	B	C	Thread in inches
MS-3057-4A	10SL, 12S	7.94	20.90	21.39	7.94	5/8-24
MS-3057-6A	14, 14S	11.11	21.59	25.27	11.11	3/4-20
MS-3057-8A	16, 16S	14.29	23.37	28.45	14.29	7/8-20
MS-3057-10A	18	15.87	23.37	30.89	15.87	1-20
MS-3057-12A	20,22	19.05	23.54	35.64	19.05	1 3/16-18
MS-3057-16A	24,28	23.81	25.78	42.75	23.81	1 7/16-18
MS-3057-20A	32	31.70	28.00	51.00	31.70	1 3/4-18
MS-3057-24A	36	34.92	29.36	57.02	34.92	2-18

Neoprene sleeve**MS-3420**

Rubber bushing. Protects wire bundles and unjacketed cables from possible damage by cable clamp.



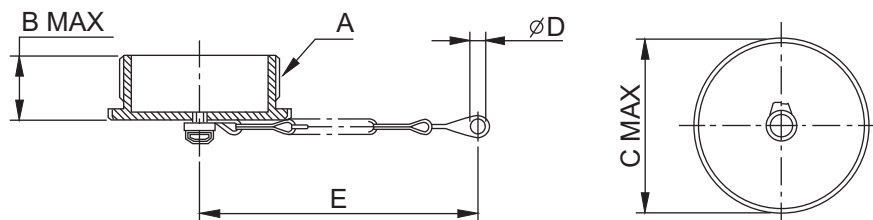
All dimensions are in mm

Part number	A	B	C	D	E Rad in inches	F Rad in inches
MS-3420-3	3.30	5.33	9.50	73.02	1/32	1/32
MS-3420-4	5.59	7.67	12.70	69.85	1/32	1/32
MS-3420-6	7.92	10.84	15.59	66.67	1/32	1/16
MS-3420-8	11.10	14.02	18.77	63.50	1/16	1/16
MS-3420-10	14.27	15.62	21.94	60.32	1/16	1/16
MS-3420-12	15.87	18.80	26.90	57.15	1/16	1/16
MS-3420-16	19.05	23.54	26.39	53.97	1/16	1/16
MS-3420-20	23.80	31.50	40.41	50.80	1/16	1/16
MS-3420-24	31.75	34.67	46.79	47.62	1/16	1/16

Other accessories

**Protective cap for MS / 97 series
MS-25042**

For plugs Has external threads and is used on all plugs where a coupling ring is provided.

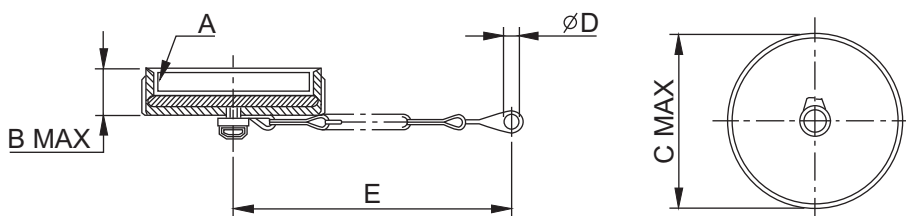


All dimensions are in mm

MS Part number	For connector size	A Thread in inches	B	C	D	E
MS 25042-10-1	MS 10S-1-SL	5/8-24	16.67	17.4	4	102
MS 25042-12-1	MS 12-12S	3/4- 20	21.4	20.6	4	115
MS 25042-14-1	MS 14-14S	7/8-20	21.4	23.7	4	115
MS 25042-16-1	MS 16-16S	1-20	21.4	26.9	4	115
MS 25042-18-1	MS 18	1 1/8-18	21.4	30	4	115
MS 25042-20-1	MS 20	1 1/4-18	21.4	33	4.8	127
MS 25042-22-1	MS 22	1 3/8-18	21.4	36.4	4.8	127
MS 25042-24-1	MS 24	1 1/2-18	21.4	39.6	4.8	140
MS 25042-28-1	MS 28	1 3/4-18	21.4	46	4.8	197
MS 25042-32-1	MS 32	2-18	21.4	52	5.6	197
MS 25042-36-1	MS 36	2 1/4-18	21.4	58.7	5.6	197
MS 25042-40-1	MS 40	2 1/2-16	21.4	65	5.6	197

**Protective cap for MS / 97 series
MS-25043**

For receptacles Has internal threads and is used on all receptacles. Gasket is provided in the dust cap forming a watertight seal.

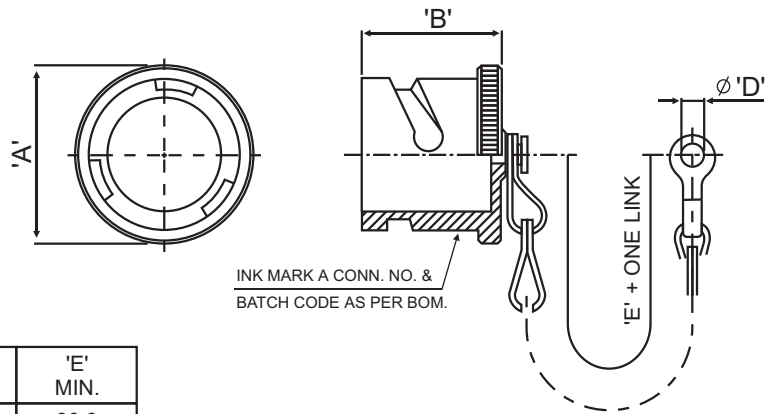


All dimensions are in mm

MS Part number	For connector size	A Thread in inches	B	C	D	E
MS 25043-10-1	MS 10S-1-SL	5/8-24	11.11	20.7	3.6	102
MS 25043-12-1	MS 12-12S	3/4- 20	11.11	25.4	3.6	115
MS 25043-14-1	MS 14-14S	7/8-20	11.11	28.6	3.6	115
MS 25043-16-1	MS 16-16S	1-20	11.11	30.2	3.6	115
MS 25043-18-1	MS 18	1 1/8-18	11.11	34.1	3.6	115
MS 25043-20-1	MS 20	1 1/4-18	11.11	37.3	4.4	127
MS 25043-22-1	MS 22	1 3/8-18	11.11	40.4	4.4	127
MS 25043-24-1	MS 24	1 1/2-18	11.11	43.6	4.4	140
MS 25043-28-1	MS 28	1 3/4-18	12.7	50	4.4	197
MS 25043-32-1	MS 32	2-18	12.7	56.3	4.8	197
MS 25043-36-1	MS 36	2 1/4-18	12.7	62.7	4.8	197
MS 25043-40-1	MS 40	2 1/2-16	12.7	69	4.8	197

- Notes :**
1. For protective caps without chain or with nylon cord, contact factory.
 2. Standard - Plating is Cad and Nickel. For alternative finishes, contact factory.
 3. Standard - straight knurling. For diamond knurling on caps, contact factory.

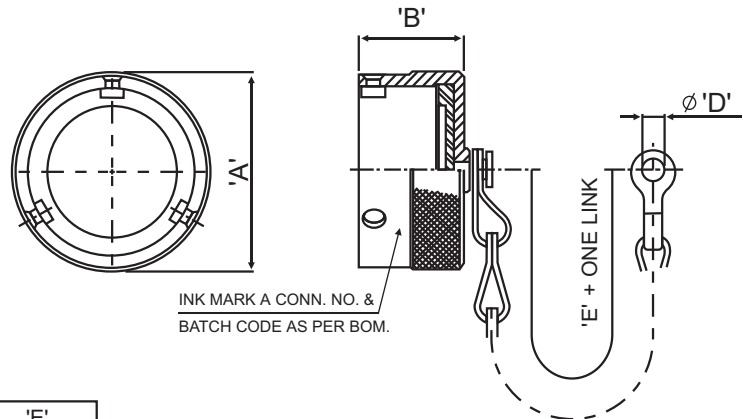
Other accessories
Protective cap for 97B series
97B-25042
 For Plugs



All dimensions are in mm

SHELL SIZE	'A' MAX.	'B' MAX.	'D' + 0.60/-0	'E' MIN.
10 SL	21.0	23.50	4.30	90.0
14 S	27.50			100.0
16 S	30.0			115.0
16				
18	33.50	31.50	4.70	130.0
20	37.0			190.0
22	40.0			
24	43.0			
28	49.50	5.50		
32	56.0			
36	62.50			
40	73.0			

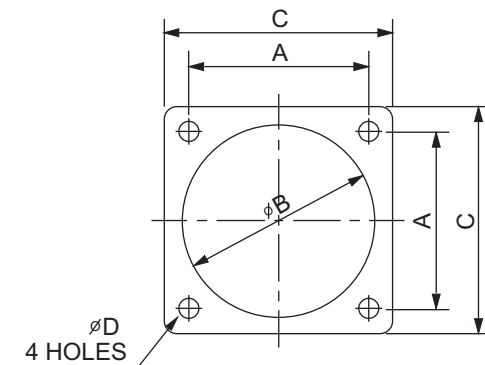
Protective cap for 97B series
97B-25043
 For Receptacle



All dimensions are in mm

SHELL SIZE	'A' MAX.	'B' ± 0.20	'D' + 0.60/-0	'E' MIN.
10 SL	23.0	16.0	4.30	90.0
14 S	30.0			100.0
16 S	32.50			115.0
16				
18	37.0	20.70	5.50	160.0
20	40.50			
22	43.50			
24	47.0			
28	54.0			
32	60.50			
36	67.0			
40	73.0			

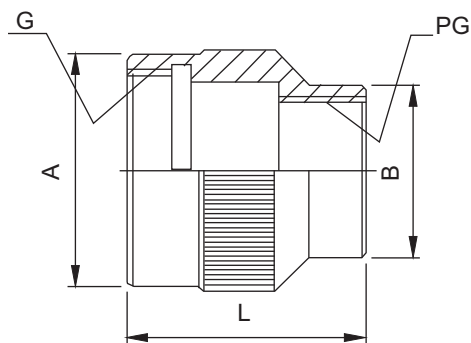
Other accessories
Plain Flat Gasket
 for MS, 97 and 97B flange mounted receptacles



All dimensions are in mm

Part number	For connector size	A max	B	C	D
MS-101000	10SL	18.26	15.90	25.40	4.35
MS-108686	12S & 12	20.62	19.05	27.80	4.35
MS-101001	14S & 14	23.01	22.20	30.15	4.35
MS-101002	16S & 16	24.61	25.40	32.50	4.35
MS-101003	18	27.00	28.57	34.90	5.15
MS-101004	20	29.36	31.75	38.10	5.15
MS-101005	22	31.75	34.90	41.20	5.15
MS-108687	24	34.90	38.10	44.45	5.15
MS-101006	28	39.70	44.45	50.80	5.15
MS-108688	32	44.45	50.80	57.15	5.55
MS-101007	36	49.22	55.57	63.50	5.55
MS-110831	40	55.77	61.92	69.85	5.55

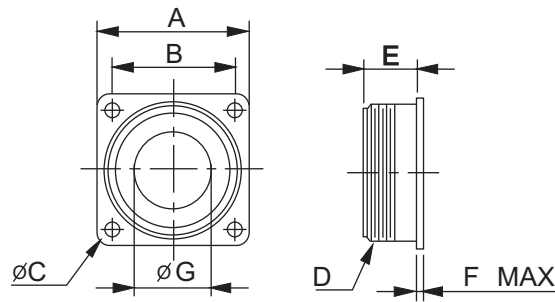
PG Adaptor



Shell size	G Thread in inches	PG 9			PG 11			PG 13			PG 16			PG 21			PG 29			PG 36			
		A	B	L	A	B	L	A	B	L	A	B	L	A	B	L	A	B	L	A	B	L	
10SL	5/8-24																						
12S	11/16-24																						
14	3/4-20				23	23	30	23	23	30													
16	7/8-20				25	25	30				25	25	30										
18	1-20	30	21	26	30	26	37				30	28	37										
20	1 1/8-18				35	26	40				35	28	40	35	35	40							
22	1 1/4-18										35	28	40	35	35	40							
24	1 3/8-18													38	35	40	40	40	40				
28	1 5/8-18													45	37	45	45	45	45				
36	2 1/8-18																57	44	55	57	57	57	55

Note - For ordering information on flat gaskets and PG adaptors, contact factory.

Other accessories
 Dummy receptacle
 MS-3105



All dimensions are in mm

Part number (see note)	A	B	C	D Thread in inches	E	F max.	G
MS-3105-10S	25.4	18.26	3.05	5/8-24	14.27	3.96	8.20
MS-3105-12S	27.79	20.62	3.05	3/4-20	14.27	3.96	11.43
MS-3105-12	27.79	20.62	3.05	3/4-20	19.05	3.96	11.43
MS-3105-14S	30.17	23.01	3.05	7/8-20	14.27	3.96	13.36
MS-3105-14	30.17	23.01	3.05	7/8-20	19.05	3.96	13.36
MS-3105-16S	32.54	24.61	3.05	1-20	14.27	3.96	16.41
MS-3105-16	32.54	24.61	3.05	1-20	19.05	3.96	16.41
MS-3105-18	34.92	26.97	3.05	1 1/8-18	19.05	5.16	18.03
MS-3105-20	38.10	29.36	3.05	1 1/4-18	19.05	5.16	23.54
MS-3105-22	41.27	31.75	3.05	1 3/8-18	19.05	5.16	25.93
MS-3105-24	44.45	34.92	3.73	1 1/2-18	20.62	5.16	29.21
MS-3105-28	50.8	39.67	3.73	1 3/4-18	20.62	5.16	34.67
MS-3105-36	63.5	49.22	4.39	2 1/4-16	22.2	9.11	46.56

Note: The dash number also indicates shell size.

Special accessories

For special accessories, please contact factory with specifications and drawings. Amphenol has in-house capability to meet and custom build your special accessories requirements for its range of MIL-C5015 MS, 97 and 97B series connectors.

For 97B - Connector Class

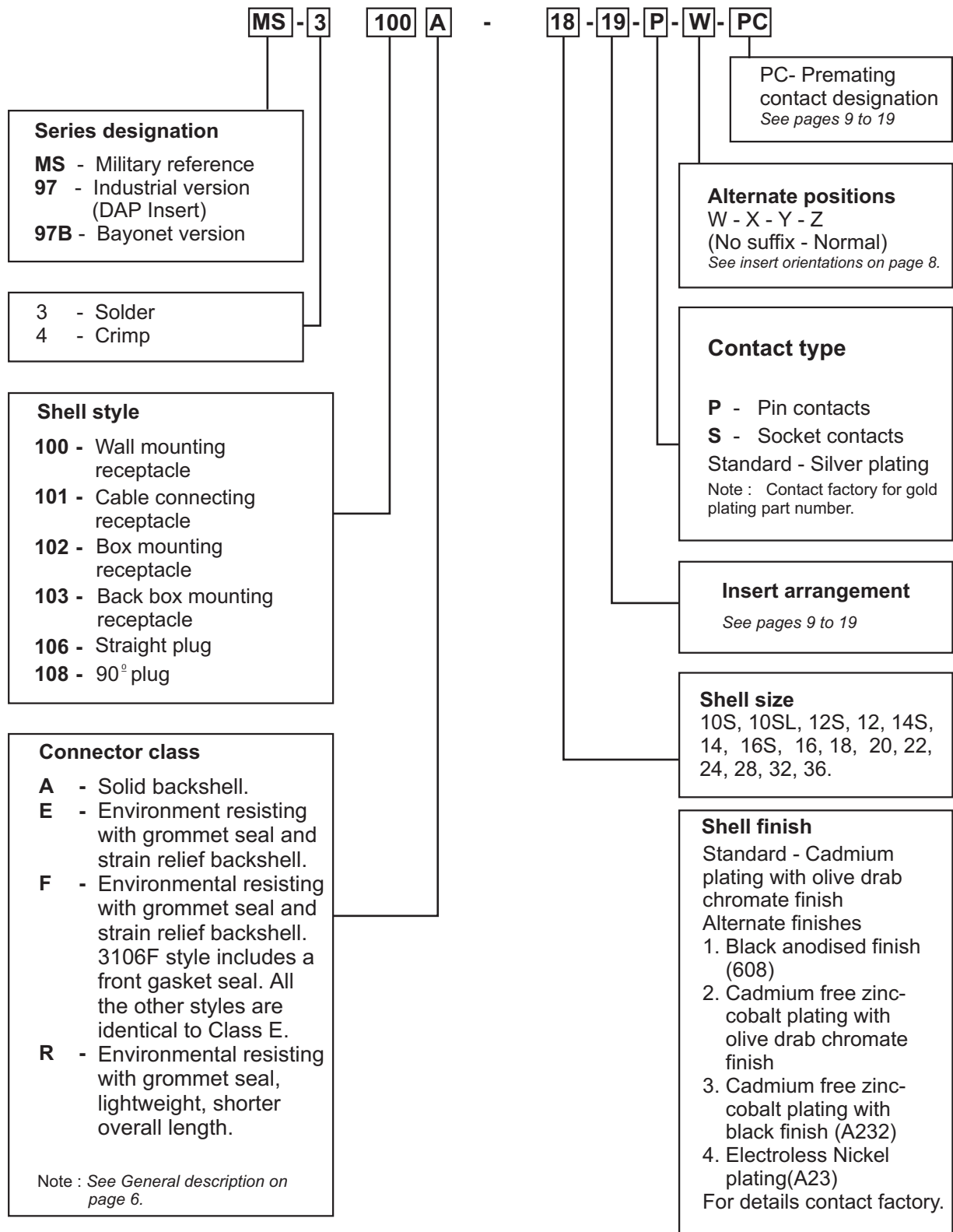
- G - Heat shrink tubing with grommet
- AG - Heat shrink tubing without grommet
- SB - Heat shrink tubing with shield braid termination & grommet
- RFI - Plug connector with grounding finger

For 97B - Connector Modification

- F 42 - Less grommet & backshell
- F 0 - Less contacts
- A 176 - Gold plated contacts
- T 00 - Metric threads in flange holes

Ordering MS/97 series connectors

To obtain the specific connector required, write down the connector number from the typical example below. Only inserts shown in the availability chart shown on page 7 can be specified. Connectors are delivered with protective plastic dust covers. Include premating contact designation only if premating contact is required. The second letter in the premating contact designation stands for the actual contact position. Any deviation from the specified design is indicated by - **D** at the end of the connector number. - **B** at the end of the connector number indicates telescopic bushing provided.



Notice : All information, including illustrations given herein is believed to be accurate at the time of printing. In lieu of design advances, Amphenol reserves the right to change specifications without notice. This publication ACR 3-9-03 MS / 97 AND 97B Series Connectors supercedes all existing Amphenol literature on MS / 97 AND 97 B Series Connectors.