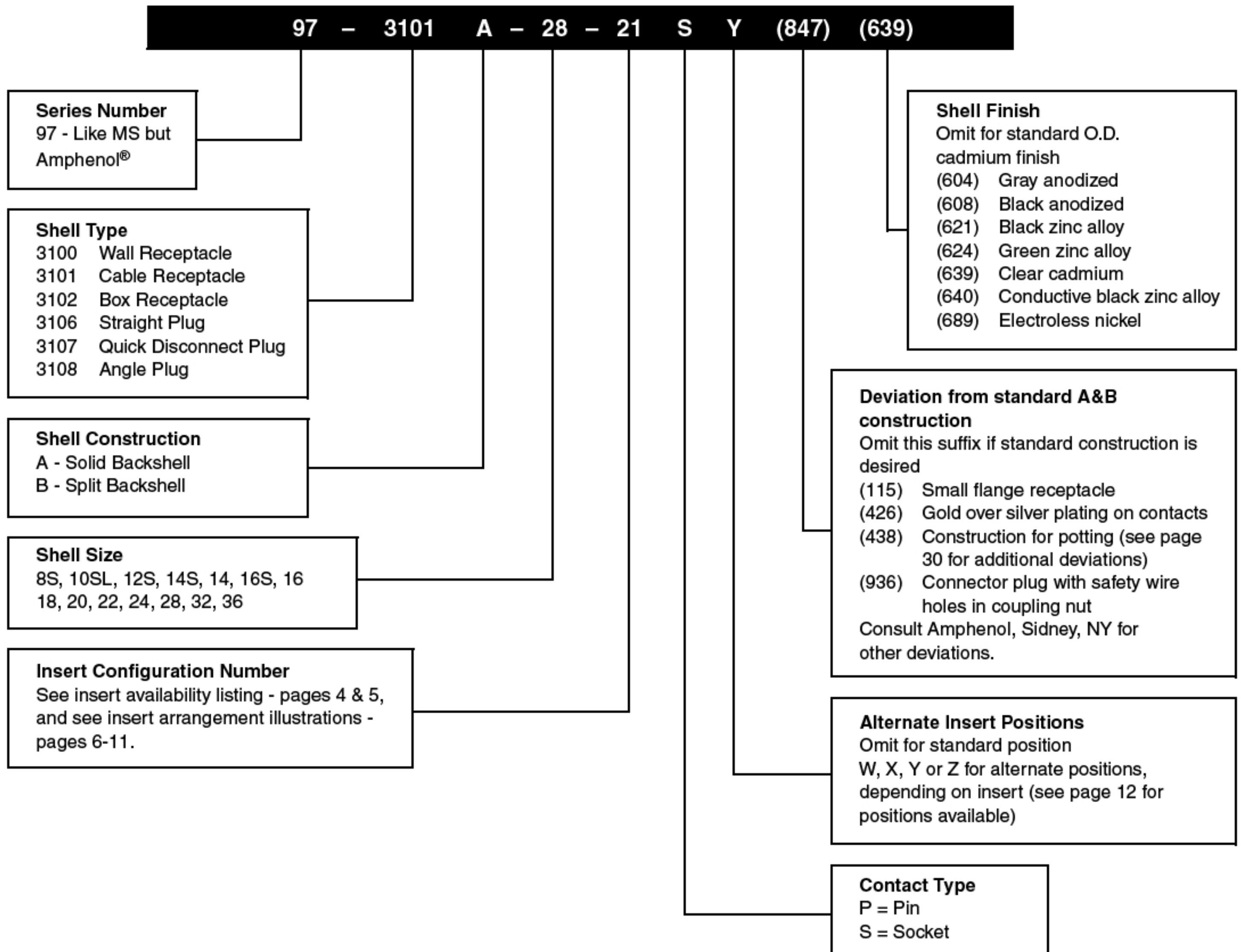


# 97 series solder type

## how to order

Example of part number for solder type connectors is given below.



Note: Accessories for 97 Series Connectors should be ordered with matching connector plating. See accessory pages 33-39.

# Amphenol® 97 Series Connectors with solder contacts



MS3100A



MS3107A



MS3101A



MS3107B



MS3102A



MS3108A



MS3106A



MS3108B



MS3106B

## DESIGN CHARACTERISTICS

- Medium to heavy weight cylindrical
- Durable, field-proven design
- Single key/keyway polarization
- Threaded coupling, hard dielectric inserts
- Non-rotating contacts
- Operating temperatures from  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Cost effective
- Intermateable and intermountable with existing 97 Series and MIL-5015 connectors
- Underwriters Laboratories approved recognition File E115497
- Canadian Standards Association Certification File LR69183

## CUSTOMER OPTIONS

- Solid or split shell construction
- Six shell styles
- 128 contact arrangements, from 1 to 52 circuits
- Alternate insert positioning
- High temperature and potting constructions
- Special plating finishes including black and green zinc alloy
- Optional gold plating on MS contacts
- Thermocouple arrangements available

Connector components are fabricated from high grade aluminum alloy, with a conductive cadmium plate finish and an olive drab chromate after-treatment. Some cable clamps are a zinc alloy with an olive drab/green chromate finish. See how to order page 19 for other finish variations.

Contacts are silver plated with pre-tinned solder cups. Optional gold over silver plating is also available. Inserts for solder style contacts are diallyl-phthalate.

Users should be aware that classes "A" and "B" of MIL-5015 have been cancelled, and these products are no longer qualified.

# 97 series solder type insert availability

Insert Number	Total Contacts	Mechanical Spacing		Service Rating	Contact Size				
		Inches	mm		0	4	8	12	16
8S-1+	1	1/16	1.57	INST.					1
10SL-3	3	1/16	1.57	A					3
10SL-4	2	1/16	1.57	A					2
12SL-844+*	4	1/16	1.57	A					4
12S-3	2	1/16	1.57	A					2
12-5+	1	1/8	3.18	D				1	
12S-6+*	2	1/16	1.57						2 Thermo-couple
14S-1†	3	1/16	1.57	A					3
14S-2	4			INST.					4
14S-4+†	1	1/8	3.18	D					1
14S-5	5			INST.					5
14S-6	6			INST.					6
14S-7	3	1/16	1.57	A					3
14S-9†	2	1/16	1.57	A					2
16S-1	7	1/16	1.57	A					7
16S-4+	2	1/8	3.18	D					2
16S-5	3	1/16	1.57	A					3
16S-6+†	3	1/16	1.57	A					3
16-7	3	1/16	1.57	A			1		2
16S-8	5	1/16	1.57	A					5
16-9	4	1/16	1.57	A				2	2
16-10	3	1/16	1.57	A				3	
16-11+†	2	1/16	1.57	A				2	
16-12	1	1/16	1.57	A		1			
16-13	2	1/16	1.57	A					2 Thermo-couple
18-1	10	1/16	1.57	A					4
				INST.					6
18-3†	2	1/8	3.18	D				2	
18-4	4	1/8	3.18	D					4
18-5+	3	1/8	3.18	D				2	1
18-8	8	1/16	1.57	A				1	7
18-9+	7			INST.				2	5
18-10†	4	1/16	1.57	A				4	
18-11	5	1/16	1.57	A				5	
18-12†	6	1.16	1.57	A					6
18-13	4	1/16	1.57	A			1	3	
18-16	1	5/16	7.92	C				1	
18-19†	10	1/16	1.57	A					10
18-20	5	1/16	1.57	A					5
18-22†	3	1/8	3.18	D					3
18-29+†	5	1/16	1.57	A					5
18-420*	1								1 Hi-Voltage**
20-3†	3	1/8	3.18	D				3	

Insert Number	Total Contacts	Mechanical Spacing		Service Rating	Contact Size				
		Inches	mm		0	4	8	12	16
20-4	4	1/8	3.18	D				4	
20-6†	3	1/8	3.18	D					3
20-7	8	1/8	3.18	D					4
		1/16	1.57	A					4
20-8	6			INST.			2		4
20-11†	13			INST.					13
20-14	5	1/16	1.57	A			2	3	
20-15	7	1/16	1.57	A				7	
20-16	9	1/16	1.57	A				2	7
20-17	6	1/16	1.57	A				5	1
20-18	9	1/16	1.57	A				3	6
20-19†	3	1/16	1.57	A			3		
20-21	9	1/16	1.57	A				1	8
20-23	2	1/16	1.57	A			2		
20-24	4	1/16	1.57	A			2		2
20-27	14	1/16	1.57	A					14
20-29	17	1/16	1.57	A					17
20-33	11	1/16	1.57	A					11
22-1†	2	1/8	3.18	D			2		
22-2	3	1/8	3.18	D			3		
22-4†	4	1/16	1.57	A			2	2	
22-5	6	1/8	3.18	D			2	4	
22-8†	2	3/16	4.75	E			2		
22-9	3	3/16	4.75	E			3		
22-10	4	3/16	4.75	E					4
22-11	2	1/4	6.35	B					2
22-12	5	1/8	3.18	D			2		3
22-13†	5	1/8	3.18	D					1
		1/16	1.57	A				4	
22-14	19	1/16	1.57	A					19
22-15	6	3/16	4.75	E					1
		1/16	1.57	A				5	
22-16†	9	1/16	1.57	A				3	6
22-18	8	1/8	3.18	D					5
		1/16	1.57	A					3
22-19	14	1/16	1.57	A					14
22-20†	9	1/16	1.57	A					9
22-22	4	1/16	1.57	A			4		
22-23	8	1/8	3.18	D				1	
		1/16	1.57	A				7	

Not all insert arrangements are currently available for environmental individual wire seal. Consult Amphenol, Sidney, NY for availability.

† Inactive for new military design, but available for replacement or for non-military purposes.

\* "MS" number not assigned. Use "97" prefix in place of "MS" in completing catalog number. See how to order, page 19.

\*\* Hi-Voltage = 17KVAC/24KVDC

♦ Molded-in pin (MIP) insert requires (910) deviation. See how to order, pg. 19.

# 97 series solder type insert availability, cont.

Insert Number	Total Contacts	Mechanical Spacing		Service Rating	Contact Size				
		Inches	mm		0	4	8	12	16
22-26*	7	1/8	3.18					2	5
22-27	9	1/8	3.18	D			1		
		1/16	1.57	A					8
22-28†	7	1/16	1.57	A				7	
22-34	5	1/8	3.18	D				3	2
24-2	7	1/8	3.18	D				7	
24-5†	16	1/16	1.57	A					16
24-6	8	1/8	3.18	D				3	
		1/16	1.57	A				5	
24-7	16	1/16	1.57	A				2	14
24-9†	2	1/16	1.57	A		2			
24-10	7	1/16	1.57	A			7		
24-11	9	1/16	1.57	A				3	6
24-12	5	1/16	1.57	A		2		3	
24-16	7	1/8	3.18	D			1		3
		1/16	1.57	A					3
24-19†	12	1/16	1.57						12
24-20*	11	1/8	3.18	D				2	9
24-21	10	1/8	3.18	D			1		9
24-22*	4	1/8	3.18	D			4		
24-27	7	3/16	4.75	E					7
24-28	24	1/16	1.57	INST.					24
28-1	9	1/8	3.18	D			1	2	
		1/16	1.57	A			2	4	
28-2	14	1/8	3.18	D				2	12
28-3	3	3/16	4.75	E			3		
28-6†	3	1/8	3.18	D		3			
28-8	12	1/16	1.57	A					9
		1/8	3.18	D					1
		3/16	4.75	E				2	
28-9	12	1/8	3.18	D				6	6
28-10	7	1/8	3.18	D				1	
		1/16	1.57	A		2	2	2	
28-11	22	1/16	1.57	A				4	18
28-12	26	1/16	1.57	A					26
28-15†	35	1/16	1.57	A					35
28-16†	20	1/16	1.57	A					20
28-17	15	1/4	6.35	B					1
		1/8	3.18	D					3
		1/16	1.57	A					11
28-18	12	5/16	7.92	C					1
		1/8	3.18	D					5
		1/16	1.57	A					2
				INST.				4	
28-19	10	1/4	6.35	B					2
		1/8	3.18	D					2
		1/16	1.57	A				4	2

Insert Number	Total Contacts	Mechanical Spacing		Service Rating	Contact Size					
		Inches	mm		0	4	8	12	16	
28-20	14	1/16	1.57	A				10	4	
28-21	37	1/16	1.57	A					37	
32-5†	2	1/8	3.18	D	2					
32-6	23	1/16	1.57	A		2	3	2	16	
32-7	35	1/16	1.57	A					7	24
				INST.						4
32-8†	30	1/16	1.57	A				6	24	
32-13	23	1/8	3.18	D				5	18	
32-17	4	1/8	3.18	D		4				
32-414	52	1/16	1.57	A					52	
36-1†	22	1/8	3.18	D				4	18	
36-5	4	1/16	1.57	A	4					
36-6	6	1/16	1.57	A	2	4				
36-7	47	1/16	1.57	A				7	40	
36-8	47	1/16	1.57	A				1	46	
36-9	31	1/16	1.57	A		1	2	14	14	
36-10	48	1/16	1.57	A					48	
36-15	35	1/16	1.57	A					34	
		1/8	3.18	D					1	
36-403*	52	1/16	1.57	A					52	

Not all insert arrangements are currently available for environmental individual wire seal. Consult Amphenol, Sidney, NY for availability.

† Inactive for new military design, but available for replacement or for non-military purposes.

\* "MS" number not assigned. Use "97" prefix in place of "MS" in completing catalog number. See how to order, page 19.

♣ Molded-in pin (MIP) insert requires (910) deviation. See how to order, pg. 19.

# 97 series solder type insert arrangements

Front view of pin insert or rear of socket insert illustrated.

Items highlighted are most popular and most readily available.

## 1 Contact

Insert Arrangement	8S-1	12-5	14S-4†	16-12	18-16	18-420*
Contacts	1#16	1#12	1#16	1#4	1#12	1#12
Service Rating	INST.	D	D	A	C	High Voltage 17KVAC/24KVDC

## 2 Contacts

Insert Arrangement	10SL-4	12S-3	12S-6*	14S-9†	16S-4	16-11†	16-13
Contacts	2#16	2#16	2#16	2#16	2#16	2#12	2#12
Service Rating	A	A	Thermocouple	A	D	A	A

Insert Arrangement	18-3†	20-23†	22-1†	22-8†	22-11	24-9†	32-5†
Contacts	2#12	2#8	2#8	2#12	2#16	2#4	2#0
Service Rating	D	A	D	E	B	A	D

## 3 Contacts

Insert Arrangement	10SL-3	14S-1†	14S-7	16S-5†	16S-6†	16-7	16-10	18-5	18-22†
Contacts	3#16	3#16	3#16	3#16	3#16	1#8, 2#16	3#12	2#12, 1#16	3#16
Service Rating	A	A	A	A	A	A	A	D	D

Insert Arrangement	20-3†	20-6†	20-19†	22-2	22-9	28-3	28-6†
Contacts	3#12	3#16	3#8	3#8	3#12	3#8	3#4
Service Rating	D	D	A	D	E	E	D

# 97 series solder type insert arrangements, cont.

Front view of pin insert or rear of socket insert illustrated.

Items highlighted are most popular and most readily available.

## 4 Contacts

Insert Arrangement	12SL-844*	14S-2†	16-9	18-4	18-10†	18-13	20-4
Contacts	4#16	4#16	2#12, 2#16	4#16	4#12	3#12, 1#8	4#12
Service Rating	1/16" spacing	INST.	A	D	A	A	D
Insert Arrangement	20-24	22-4†	22-10	22-22	24-22	32-17	36-5
Contacts	2#8, 2#16	2#8, 2#12	4#16	4#8	4#8	4#4	4#0
Service Rating	A	A	E	A	D	D	A

## 5 Contacts

Insert Arrangement	14S-5	16S-8	18-11	18-20†	18-29†	20-14
Contacts	5#16	5#16	5#12	5#16	5#16	3#12, 2#8
Service Rating	INST.	A	A	A	A	A
Insert Arrangement	22-12	22-13†	22-34†	24-12		
Contacts	2#8, 3#16	1#16, 4#12	3#12, 2#16	2#4, 3#12		
Service Rating	D	E = D; A, B, C, D = A	D	A		

### MIL-SPEC SERVICE RATING

		INST.	A	D	E	B	C
Limiting Operating	DC	250	700	1250	1750	2450	4200
Voltages at Sea Level	AC (rms)	200	500	900	1250	1750	3000

See notes 1 and 2 under TEST CURRENT.

INST. service normally for low voltage and currents.

Effective Creepage (nominal)	Inch	1/16	1/8	3/16	1/4	5/16	1
	mm	1.57	3.18	4.75	6.35	7.92	25.40
Mechanical Spacing (nominal)	Inch	1/16	1/8	3/16	1/4	5/16	
	mm	1.57	3.18	4.75	6.35	7.92	

† Inactive for new military design, but available for replacement or for non-military purposes.

\* "MS" number not assigned. Use "97" prefix in place of "MS" in completing catalog number. See how to order, page 19.

### TEST CURRENT

Contact Size	16	12	8	4	0
Amperes	13	23	46	80	150

NOTE 1: Transients were not considered in calculating these values.

NOTE 2: Limiting operating voltages at 50,000 feet altitude are approximately 25% of the sea level values.

### CONTACT LEGEND

16	12	8	4	0	16	12	16 12
				IRON		CONSTANTAN	

# 97 series solder type insert arrangements, cont.

Front view of pin insert or rear of socket insert illustrated.

Items highlighted are most popular and most readily available.

## 6 Contacts

Insert Arrangement	14S-6	18-12†	20-8	20-17	22-5	22-15	36-6
Contacts	6#16	6#16	4#16, 2#8	5#12, 1#16	2#12, 4#16	5#12, 1#16	2#0, 4#4
Service Rating	INST.	A	INST.	A	D	D = E; A, B, C, E, F = A	A

## 7 Contacts

Insert Arrangement	16S-1	18-9	20-15	22-26*	22-28†
Contacts	7#16	5#16, 2#12	7#12	2#12, 5#16	7#12
Service Rating	A	INST.	A	1/8" spacing	A

Insert Arrangement	24-2	24-10	24-16	24-27	28-10
Contacts	7#12	7#8	3#16, 1#8, 3#12	7#16	3#12, 2#8, 2#4
Service Rating	D	A	A, B, F, G = D; C, D, E = A	E	G = D; all others = A

## 8 Contacts

Insert Arrangement	18-8	20-7	22-18	22-23	24-6
Contacts	1#12, 7#16	8#16	8#16	8#12	8#12
Service Rating	A	A, B, H, G = D; C, D, E, F = A	A, B, H, F, G = D; all others = A	H = D; all others = A	A, G, H = D; all others = A

# 97 series solder type insert arrangements, cont.

Front view of pin insert or rear of socket insert illustrated.

Items highlighted are most popular and most readily available.

## 9 Contacts

Insert Arrangement	20-16	20-18	20-21	22-16†	22-20†
Contacts	7#16, 2#12	3#12, 6#16	1#12, 8#16	3#12, 6#16	9#16
Service Rating	A	A	A	A	A
Insert Arrangement	22-27	24-11	28-1		
Contacts	1#8, 8#16	3#8, 6#12	3#8, 6#12		
Service Rating	J = D; all others = A	A	A, J, E = D; all others = A		

## 10 Contacts

Insert Arrangement	18-1	18-19	24-21	28-19
Contacts	10#16	10#16	1#8, 9#16	4#12, 6#16
Service Rating	B, C, F, G = A; all others = INST.	A	D	H, M = B; A, B = D; all others = A

## 11 Contacts

Insert Arrangement	20-33	24-20
Contacts	11#16	2#12, 9#16
Service Rating	A	D

## 12 Contacts

Insert Arrangement	24-19†	28-8	28-9	28-18
Contacts	12#16	2#12, 10#16	6#12, 6#16	12#16
Service Rating	1/16" spacing	L, M = E; B = D; all others = A	D	M = C; A, B = A; C, D, E, F = INST.; all others = D

## 13 Contacts

Insert Arrangement	20-11†
Contacts	13#16
Service Rating	INST.

† Inactive for new military design, but available for replacement or for non-military purposes.

\* "MS" number not assigned. Use "97" prefix in place of "MS" in completing catalog number. See how to order, page 19.

See Service Rating and Test Current information on page 7.

## CONTACT LEGEND

16	12	8	4	0

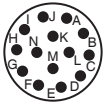
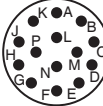
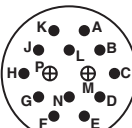
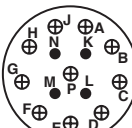


# 97 series solder type insert arrangements, cont.

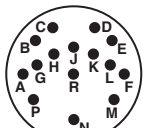
Front view of pin insert or rear of socket insert illustrated.

Items highlighted are most popular and most readily available.

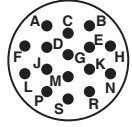
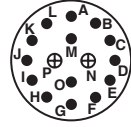
## 14 Contacts

				
Insert Arrangement	20-27	22-19	28-2	28-20
Contacts	14#16	14#16	2#12, 12#16	10#12, 4#16
Service Rating	A	A	D	A


## 15 Contacts

	
Insert Arrangement	28-17
Contacts	15#16
Service Rating	R = B; M, N, P = D; all others = A

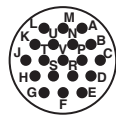
## 16 Contacts

		
Insert Arrangement	24-5†	24-7
Contacts	16#16	2#12, 14#16
Service Rating	A	A

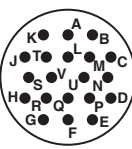
## 17 Contacts

	
Insert Arrangement	20-29
Contacts	17#16
Service Rating	A

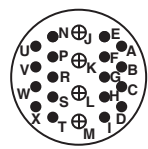
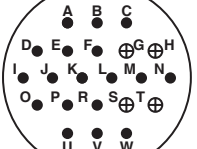
## 19 Contacts

	
Insert Arrangement	22-14
Contacts	19#16
Service Rating	A


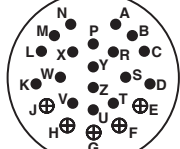
## 20 Contacts

	
Insert Arrangement	28-16†
Contacts	20#16
Service Rating	A

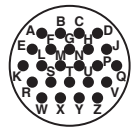
## 22 Contacts

		
Insert Arrangement	28-11	36-1†
Contacts	4#12, 18#16	4#12, 18#16
Service Rating	A	D

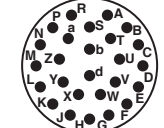
## 23 Contacts

		
Insert Arrangement	32-6	32-13
Contacts	2#4, 3#8, 2#12, 16#16	5#12, 18#16
Service Rating	A	D

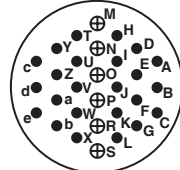
## 24 Contacts

	
Insert Arrangement	24-28
Contacts	24#16
Service Rating	INST.

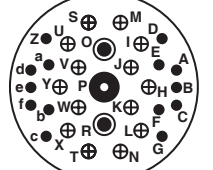
## 26 Contacts

	
Insert Arrangement	28-12
Contacts	26#16
Service Rating	A

## 30 Contacts

	
Insert Arrangement	32-8†
Contacts	6#12, 24#16
Service Rating	A

## 31 Contacts

	
Insert Arrangement	36-9
Contacts	1#4, 2#8, 14#12, 14#16
Service Rating	A

# 97 series solder type insert arrangements, cont.

Front view of pin insert or rear of socket insert illustrated.

Items highlighted are most popular and most readily available.

## 35 Contacts

Insert Arrangement	28-15†	32-7	36-15
Contacts	35#16	7#12, 28#16	35#16
Service Rating	A	A, B, h, j = INST; all others = A	m = D; all others = A

## 37 Contacts

Insert Arrangement	28-21
Contacts	37#16
Service Rating	A

## 47 Contacts

Insert Arrangement	36-7	36-8
Contacts	7#12, 40#16	1#12, 46#16
Service Rating	A	A

## 48 Contacts

Insert Arrangement	36-10
Contacts	48#16
Service Rating	A

## 52 Contacts

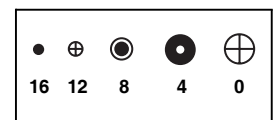
Insert Arrangement	32-414*	36-403*
Contacts	52#16	52#16
Service Rating	A	A

† Inactive for new military design, but available for replacement or for non-military purposes.

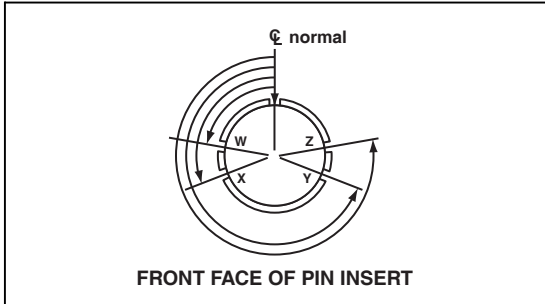
\* "MS" number not assigned. Use "97" prefix in place of "MS" in completing catalog number. See how to order, page 19.

See Service Rating and Test Current information on page 7.

### CONTACT LEGEND



# 97 series solder type alternate insert positioning



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
16S-1	80	–	–	280
16S-4	35	110	250	325
16S-5	70	145	215	290
16S-6	90	180	270	–
16-7	80	110	250	280
16S-8	–	170	265	–
16-9	35	110	250	325
16-10	90	180	270	–
16-11	35	110	250	325
16-13	35	110	250	325
18-1	70	145	215	290
18-3	35	110	250	325
18-4	35	110	250	325
18-5	80	110	250	280
18-8	70	–	–	290
18-9	80	110	250	280
18-10	–	120	240	–
18-11	–	170	265	–
18-12	80	–	–	280
18-13	80	110	250	280
18-19	–	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	–
20-6	70	145	215	290
20-7	80	110	250	280
20-8	80	110	250	280
20-14	80	110	250	280
20-15	80	–	–	280
20-16	80	110	250	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

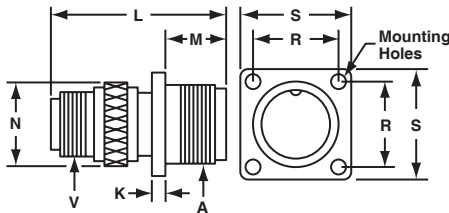
Insert Arrangement	Degrees			
	W	X	Y	Z
22-1	35	110	250	325
22-2	70	145	215	290
22-4	35	110	250	325
22-5	35	110	250	325
22-8	35	110	250	325
22-9	70	145	215	290
22-10	35	110	250	325
22-11	35	110	250	325
22-12	80	110	250	280
22-13	35	110	250	325
22-14	80	110	250	280
22-15	80	110	250	280
22-16	80	110	250	280
22-18	80	110	250	280
22-19	80	110	250	280
22-20	35	110	250	325
22-22	–	110	250	–
22-23	35	–	250	–
22-27	80	–	250	280
22-28	80	–	–	280
22-34	80	110	250	280
24-2	80	–	–	280
24-5	80	110	250	280
24-6	80	110	250	280
24-7	80	110	250	280
24-9	35	110	250	325
24-10	80	–	–	280
24-11	35	110	250	325
24-12	80	110	250	280
24-16	80	110	250	280
24-20	80	110	250	280
24-21	80	110	250	280
24-22	45	110	250	–
24-27	80	–	–	280
24-28	80	110	250	280
28-1	80	110	250	280
28-2	35	110	250	325
28-3	70	145	215	290
28-6	70	145	215	290
28-8	80	110	250	280
28-9	80	110	250	280
28-10	80	110	250	280
28-11	80	110	250	280
28-12	90	180	270	–
28-15	80	110	250	280
28-16	80	110	250	280
28-17	80	110	250	280
28-18	70	145	215	290
28-19	80	110	250	280
28-20	80	110	250	280
28-21	80	110	250	280
32-5	35	110	250	325
32-6	80	110	250	280
32-7	80	125	235	280
32-8	80	125	235	280
32-13	80	110	250	280
32-17	45	110	250	–
32-414*	80*	110*	250*	280*
36-1	80	110	250	280
36-5	–	120	240	–
36-6	35	110	250	325
36-7	80	110	250	280
36-8	80	110	250	280
36-9	80	125	235	280
36-10	80	125	235	280
36-15	60	125	245	305

\*Rotates opposite above illustration.

# 97 series solder type receptacles

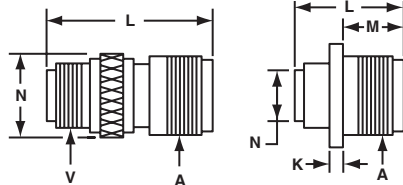
## MS3100A wall mount receptacle

Solid shell construction is strong and conserves space. Includes integral polarizing key in front. Back shell is threaded for standard MS/AN fittings.



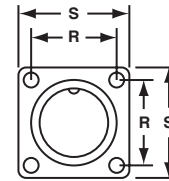
## MS3101A cable receptacle

Solid shell construction is strong and conserves space. Includes integral polarizing key in front shell. Machined back shell is threaded for standard MS/AN fittings. Can be unscrewed for inspection or soldering.

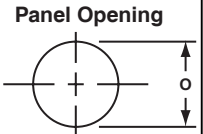


## MS3102A box receptacle

Solid shell designed for open wiring. Mounts directly on chassis, equipment or panel. Includes internal polarized key in front shell.



**Mounting Holes**  
 .173 (4.394) DIA.  
 FOR SIZE 32 AND 36  
 .147 (3.734) DIA.  
 FOR SIZES 24 AND 28  
 .120 (3.048) DIA.  
 FOR ALL OTHER SIZES



## MS3100A and MS3101A

Connector Size	A Coupling Thread	K Ref.		L Max.		M Ref.		N Ref.		O Ref.		R Ref.		S Ref.		V Fitting Threads
		Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	
8S	1/2-28	5/64	1.98	1-1/4	31.75	9/16	14.27	17/32	13.49	.562	14.27	19/32	15.06	7/8	22.23	1/2-28
10S	5/8-24	5/64	1.98	1-5/16	33.32	9/16	14.27	5/8	15.88	.688	17.48	23/32	18.24	1	25.40	1/2-28
10SL	5/8-24	5/64	1.98	1-9/32	32.53	9/16	14.27	3/4	19.05	.812	20.62	23/32	18.24	1	25.40	5/8-24
12S	3/4-20	5/64	1.98	1-15/32	37.29	9/16	14.27	25/32	19.84	.812	20.62	13/16	20.62	1-3/32	27.76	5/8-24
12	3/4-20	5/64	1.98	1-27/32	46.81	3/4	19.05	25/32	19.84	.812	20.62	13/16	20.62	1-3/32	27.76	5/8-24
14S	7/8-20	5/64	1.98	1-15/32	37.39	9/16	14.27	7/8	22.23	.938	23.83	29/32	23.01	1-3/16	30.15	3/4-20
14	7/8-20	5/64	1.98	1-55/64	47.04	3/4	19.05	7/8	22.23	.938	23.83	29/32	23.01	1-3/16	30.15	3/4-20
16S	1 -20	5/64	1.98	1-15/32	37.39	9/16	14.27	1	25.40	1.062	26.97	31/32	24.59	1-9/32	32.54	7/8-20
16	1 -20	1/8	3.18	1-57/64	47.85	3/4	19.05	1	25.40	1.062	26.97	31/32	24.59	1-9/32	32.54	7/8-20
18	1-1/8-18	1/8	3.18	1-63/64	50.24	3/4	19.05	1-1/8	28.58	1.188	30.18	1-1/16	26.97	1-3/8	34.93	1 -20
20	1-1/4-18	1/8	3.18	1-57/64	47.85	3/4	19.05	1-1/4	31.75	1.312	33.32	1-5/32	29.36	1-1/2	38.10	1-3/16-18
22	1-3/8-18	1/8	3.18	1-63/64	50.24	3/4	19.05	1-3/8	34.93	1.438	36.53	1-1/4	31.75	1-5/8	39.67	1-3/16-18
24	1-1/2-18	1/8	3.18	2-1/4	57.15	13/16	20.62	1-1/2	38.10	1.562	36.67	1-3/8	34.43	1-3/4	44.45	1-7/16-18
28	1-3/4-18	1/8	3.18	2-1/4	57.15	13/16	20.62	1-3/4	44.45	1.812	46.02	1-9/16	39.67	2	50.80	1-7/16-18
32	2 -18	1/8	3.18	2-3/8	60.33	7/8	22.23	2-1/32	51.59	2.062	52.37	1-3/4	44.45	2-1/4	57.15	1-3/4-18
36	2-1/4-16	1/8	3.18	2-3/8	60.33	7/8	22.23	2-1/4	57.15	2.312	58.72	1-15/16	49.20	2-1/2	63.50	2 -18

## MS3102A

Connector Size	A Coupling Thread	K Ref.		L Max.		M Ref.		N Ref.		O Ref.		R Ref.		S Ref.	
		Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
8S	1/2-28	5/64	1.98	55/64	21.82	9/16	14.27	7/16	11.10	.562	14.27	19/32	15.06	7/8	22.23
10S	5/8-24	5/64	1.98	55/64	21.82	9/16	14.27	1/2	12.70	.688	17.48	23/32	18.24	1	25.40
10SL	5/8-24	5/64	1.98	61/64	24.21	35/64	13.87	11/16	17.48	.812	20.62	23/32	18.24	1	25.40
12S	3/4-20	5/64	1.98	31/32	24.61	9/16	14.27	11/16	17.45	.812	20.62	13/16	20.62	1-3/32	27.76
12	3/4-20	5/64	1.98	1-21/64	33.73	3/4	19.05	11/16	17.45	.812	20.62	13/16	20.62	1-3/32	27.76
12SL	3/4-20	5/64	1.98	27/32	21.44	35/64	13.87	11/16	17.45	.938	23.83	13/16	20.62	1-3/32	27.76
14S	7/8-20	5/64	1.98	61/64	24.21	9/16	14.27	3/4	19.05	.938	23.83	29/32	23.01	1-3/16	30.15
14	7/8-20	5/64	1.98	1-11/32	34.14	3/4	19.05	3/4	19.05	.938	23.83	29/32	23.01	1-3/16	30.15
16S	1 -20	5/64	1.98	61/64	24.21	9/16	14.27	7/8	22.23	1.062	26.97	31/32	24.59	1-9/32	32.54
16	1 -20	1/8	3.18	1-3/8	34.92	3/4	19.05	7/8	22.23	1.062	26.97	31/32	24.59	1-9/32	32.54
18	1-1/8-18	1/8	3.18	1-3/8	34.92	3/4	19.05	1	25.40	1.188	30.18	1-1/16	26.97	1-3/8	34.93
20	1-1/4-18	1/8	3.18	1-3/8	34.92	3/4	19.05	1-1/8	28.58	1.312	33.32	1-5/32	29.36	1-1/2	38.10
22	1-3/8-18	1/8	3.18	1-3/8	34.92	3/4	19.05	1-1/4	31.75	1.438	36.53	1-1/4	31.75	1-5/8	41.28
24	1-1/2-18	1/8	3.18	1-3/8	34.92	13/16	20.62	1-3/8	34.93	1.562	39.67	1-3/8	34.93	1-3/4	44.45
28	1-3/4-18	1/8	3.18	1-3/8	34.92	13/16	20.62	1-5/8	41.28	1.812	46.02	1-9/16	39.67	2	50.80
32	2 -18	1/8	3.18	1-15/32	37.31	7/8	22.23	1-29/32	48.41	2.062	52.37	1-3/4	44.45	2-1/4	57.15
36	2-1/4-16	1/8	3.18	1-15/32	37.31	7/8	22.23	2-1/8	53.98	2.312	58.72	1-15/16	49.20	2-1/2	63.50

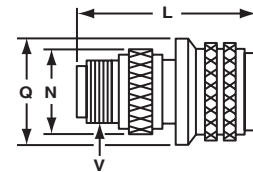
# 97 series solder type plugs with solid shells

## MS3106A

Connector Size	L Max.		N Ref.		Q Max.		V Fitting Threads
	Inch	mm	Inch	mm	Inch	mm	
8S	1-1/4	31.75	17/32	13.49	3/4	19.05	1/2-28
10S	1-5/16	33.32	5/8	15.88	7/8	22.23	1/2-28
10SL	1-3/8	34.93	3/4	19.05	7/8	22.23	5/8-24
12S	1-7/16	36.50	25/32	19.84	1	25.40	5/8-24
12	1-7/8	47.63	25/32	19.84	1	25.40	5/8-24
12SL	1-31/64	37.69	7/8	22.23	1	25.40	3/4-20
14S	1-15/32	37.13	7/8	22.23	1-1/8	28.58	3/4-20
14	1-7/8	47.47	7/8	22.23	1-1/8	28.58	3/4-20
16S	1-15/32	37.13	1	25.40	1-1/4	31.75	7/8-20
16	1-7/8	47.47	1	25.40	1-1/4	31.75	7/8-20
18	1-31/32	49.88	1-1/8	28.57	1-11/32	34.11	1 -20
20	1-7/8	47.50	1-1/4	31.75	1-15/32	37.29	1-3/16-18
22	1-31/32	49.88	1-3/8	34.93	1-19/32	40.46	1-3/16-18
24	2-1/4	57.15	1-1/2	38.10	1-23/32	43.64	1-7/16-18
28	2-1/4	57.15	1-3/4	44.45	1-31/32	49.99	1-7/16-18
32	2-3/8	60.33	2-1/32	51.59	2-7/32	56.34	1-3/4-18
36	2-3/8	60.33	2-1/4	57.15	2-15/32	62.69	2 -18

### MS3106A straight plug

Sturdy, simple to assemble. Coupling ring machined from solid aluminum bar stock for high tensile strength. Mates with all types of MS receptacles. Front shell includes polarizing keyway. Back shell is threaded for standard MS/AN fittings.

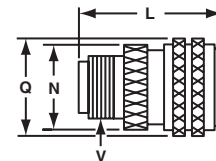


## MS3107A

Connector Size	L Max.		N Ref.		Q Max.		V Fitting Threads
	Inch	mm	Inch	mm	Inch	mm	
10S	1-5/16	33.32	5/8	15.88	7/8	22.23	1/2-28
10SL	1-3/8	34.92	3/4	19.05	7/8	22.23	5/8-24
12S	1-7/16	36.50	25/32	19.84	1	25.40	5/8-24
12	1-7/8	47.63	25/32	19.84	1	25.40	5/8-24
14S	1-15/32	37.13	7/8	22.23	1-1/8	38.58	3/4-20
14	1-7/8	47.47	7/8	22.23	1-1/8	28.58	3/4-20
16S	1-15/32	37.13	1	25.40	1-1/4	31.75	7/8-20
16	1-7/8	47.47	1	25.40	1-1/4	31.75	7/8-20
18	1-31/32	49.88	1-1/8	28.58	1-11/32	34.11	1 -20
20	1-7/8	47.50	1-1/4	31.75	1-15/32	37.29	1-3/16-18
22	1-31/32	49.88	1-3/8	34.93	1-19/32	40.46	1-3/16-18
24	2-1/4	57.15	1-1/2	38.10	1-23/32	43.64	1-7/16-18
28	2-1/4	57.15	1-3/4	44.45	1-31/32	49.99	1-7/16-18

### MS3107A quick-disconnect plug

For fast connect/disconnect applications. Front shell has polarizing keyway. Mates with all types of MS receptacles. Back shell is threaded for standard MS/AN fittings.

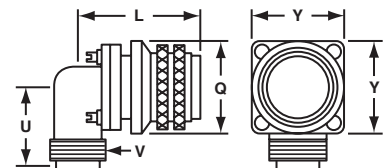


## MS3108A

Connector Size	L Ref.		Q Max.		U Ref.		V Fitting Threads	Y Ref.	
	Inch	mm	Inch	mm	Inch	mm		Inch	mm
10S	1-1/4	31.75	7/8	22.23	7/8	22.23	1/2-28	25/32	19.84
10SL	1-5/16	33.32	7/8	22.23	1	25.40	5/8-24	1-1/16	26.97
12S	1-3/8	34.93	1	25.40	1	25.40	5/8-24	1-1/16	26.97
12SL	1-3/8	34.93	1	25.40	1	25.40	3/4-20	1-1/16	26.97
12	1-13/64	30.56	1	25.40	1	25.40	5/8-24	1-1/16	26.97
14S	1-3/8	34.93	1-1/8	28.58	1	25.40	3/4-20	1-1/16	26.97
14	1-13/16	46.02	1-1/8	28.58	1	25.40	3/4-20	1-1/16	26.97
16S	1-1/2	38.10	1-1/4	31.75	1-1/8	28.58	7/8-20	1-5/16	33.32
16	1-15/16	49.20	1-1/4	31.75	1-1/8	28.58	7/8-20	1-5/16	33.32
18	1-15/16	49.20	1-11/32	34.11	1-1/8	28.58	1 -20	1-5/16	33.32
20	2-1/16	52.37	1-15/32	37.29	1-5/16	33.32	1-3/16-18	1-5/8	42.28
22	2-1/16	52.37	1-19/32	40.46	1-5/16	33.32	1-3/16-18	1-5/8	42.28
24	2-15/32	62.69	1-23/32	43.64	1-1/2	38.10	1-7/16-18	2	50.80
28	2-15/32	62.69	1-31/32	49.99	1-1/2	38.10	1-7/16-18	2	50.80

### MS3108A angle plug

For use where space in front of panel or wall is at a premium. Swivel ring and plate combination allow cable take off at any angle relative to front shell polarizing key. Back shell is threaded for standard MS/AN fittings.



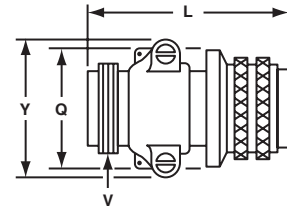
# 97 series solder type plugs with split shells

## MS3106B

Connector Size	L Max.		Q Max.		V Fitting Threads	Y Ref.	
	Inch	mm	Inch	mm		Inch	mm
14S	1-11/16	42.85	1-1/8	28.58	3/4-20	1-5/32	29.36
16S	1-11/16	42.85	1-1/4	31.75	7/8-20	1-1/4	31.75
18	2-1/16	52.37	1-11/32	34.11	1 -20	1-41/64	41.66
20	2-1/8	53.98	1-15/32	37.29	1-3/16-18	1-13/16	46.02
22	2-1/8	53.98	1-19/32	40.46	1-3/16-18	1-15/16	49.20
24	2-9/32	57.94	1-23/32	43.64	1-7/16-18	2-1/16	52.37
28	2-9/32	57.94	1-31/32	49.99	1-7/16-18	2-5/16	58.72
32	2-5/16	58.72	2-7/32	56.34	1-3/4-18	2-19/32	65.86
36	2-11/32	59.51	2-15/32	62.69	2 -18	2-27/32	72.21

### MS3106B straight plug

Used for unusual conduit applications where soldering and inspection is the prime requirement. Back shell is threaded for all standard MS/AN fittings.

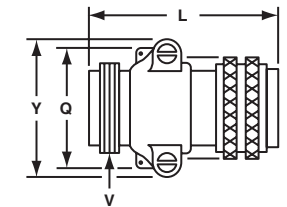


## MS3107B

Connector Size	L Max.		Q Max.		V Fitting Threads	Y Ref.	
	Inch	mm	Inch	mm		Inch	mm
14S	1-11/16	42.85	1-1/8	28.58	3/4-20	1-5/32	29.36
16S	1-11/16	42.85	1-1/4	31.75	7/8-20	1-1/4	31.75
18	2-1/16	52.37	1-11/32	34.11	1 -20	1-41/64	41.66
20	2-1/8	53.99	1-15/32	37.29	1-3/16-18	1-13/16	46.02
22	2-1/8	53.99	1-19/32	40.46	1-3/16-18	1-15/16	49.20
24	2-9/32	57.94	1-23/32	43.64	1-7/16-18	2-1/16	52.37
28	2-9/32	57.94	1-31/32	49.99	1-7/16-18	2-5/16	58.72

### MS3107B quick-disconnect plug

For fast connect/disconnect applications. Front shell has polarizing keyway. Mates with all types of MS receptacles. Back shell is threaded for standard MS/AN fittings.



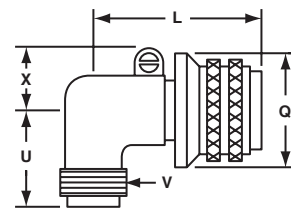
## MS3108B

Connector Size	L Ref.		Q Max.		U Ref.		V Fitting Threads	X Ref.	
	Inch	mm	Inch	mm	Inch	mm		Inch	mm
10S	1-3/8	34.93	7/8	22.23	7/8	22.23	1/2-28		
10SL	1-1/2	38.10	7/8	22.23	1	25.40	5/8-24		
12S	1-9/16	39.67	1	25.40	1	25.40	5/8-24	1/2	12.70
12	1-7/8	47.63	1	25.40	1	25.40	5/8-24	1/2	12.70
14S	1-23/32	43.64	1-1/8	28.58	1-1/16	26.97	3/4-20	21/32	16.66
14	1-15/16	49.20	1-1/8	28.58	1-1/16	26.97	3/4-20	21/32	16.66
16S	1-3/4	44.45	1-1/4	31.75	1-1/8	28.58	7/8-20	1-1/2	38.10
16	2-1/8	53.98	1-1/4	31.75	1-1/8	28.58	7/8-20	1-1/2	38.10
18	2-5/32	54.75	1-11/32	34.11	1-3/16	30.15	1 -20	1-41/64	41.66
20	2-3/8	60.33	1-15/32	37.29	1-5/16	33.32	1-3/16-18	1-13/16	46.02
22	2-13/32	61.11	1-19/32	40.46	1-5/16	33.32	1-3/16-18	1-15/16	49.20
24	2-5/8	66.68	1-23/32	43.64	1-7/16	36.50	1-7/16-18	2-1/16	52.37
28	2-5/8	66.68	1-31/32	49.99	1-7/16	36.50	1-7/16-18	2-5/16	58.72
32	2-13/16	71.42	2-7/32	56.34	1-3/4	44.45	1-3/4-18	2-19/32	65.86
36	2-27/32	72.21	2-15/32	62.69	1-15/16	49.20	2 -18	2-27/32	72.21

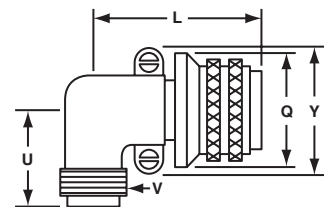
### MS3108B angle plug

Lightweight, roomy cavity, split longitudinally for convenient solder or inspection. Front shell is keyed to allow the 90° angle housing to be rotated and locked at any 45° increment.

#### Sizes 10S thru 14



#### Sizes 16S thru 40



# 97 series solder type availability and weight reference

Insert Number	Wall Receptacles MS3100	Cable Receptacles MS3101	Box Receptacles MS3102	Straight Plugs MS3106		Quick Disconnect Plugs MS3107		Angle Plugs MS3108		Total Contacts
	Solid Shell	Solid Shell	Solid Shell	Solid Shell	Split Shell	Solid Shell	Split Shell	Solid Shell	Split Shell	
	A	A	A	A	B	A	B	A	B	
8S-1	.02	.01	.01	.02						1
10SL-3P	.03	.03	.02							3
10SL-3S				.03		.03		.06	.05	3
10SL-4P†	.02	.02	.02							2
10SL-4S†				.03		.03		.06	.05	2
12S-3	.04	.03	.03	.03		.03		.07	.07	2
12-5	.05	.04	.03	.06		.06		.09	.08	1
12S-6*	.04	.03	.03	.04		.04		.07	.08	2
12SL-844P*			.03							4
12SL-844S*				.05		.06		.08		4
14S-1†	.05	.04	.03	.06	.06	.06	.06	.08	.08	3
14S-2	.05	.04	.03	.06	.06	.06	.06	.08	.08	4
14S-4†	.05	.04	.03	.06	.06	.06	.06	.08	.08	1
14S-5	.05	.04	.04	.06	.06	.06	.06	.08	.08	5
14S-6	.05	.04	.04	.06	.06	.06	.06	.08	.08	6
14S-7	.05	.04	.03	.06	.06	.06	.06	.08	.08	3
14S-9†	.05	.04	.03	.06	.06	.07	.06	.08	.08	2
16S-1	.06	.05	.05	.07	.07	.08	.07	.14	.11	7
16S-4	.06	.05	.04	.07	.07	.07	.07	.12	.10	2
16S-5†	.06	.05	.04	.07	.07	.07	.07	.12	.10	3
16S-6†	.06	.05	.04	.07	.07	.09	.07	.12	.10	3
16-7	.08	.08	.07	.09		.07		.15	.14	3
16S-8	.06	.05	.04	.07	.07	.09	.07	.12	.10	5
16-9	.08	.07		.09		.09	.10	.12	.13	4
16-10	.08	.08	.07	.09		.09		.15	.14	3
16-11†	.08	.07	.07	.09		.11		.14	.13	2
16-12	.10	.09	.08	.11		.08		.16	.15	1
16-13	.07	.07	.06	.08		.11		.14	.13	2
18-1	.10	.10	.08	.11	.13	.12	.13	.16	.15	10
18-3†	.10	.10	.08	.12	.13	.11	.13	.16	.15	2
18-4	.09	.09	.07	.11	.13	.12	.13	.16	.15	4
18-5	.10	.10	.08	.12	.13	.13	.13	.16	.15	3
18-8	.10	.10	.08	.12	.14	.12	.14	.16	.15	8
18-9	.11	.10	.09	.12	.14	.13	.14	.17	.16	7
18-10†	.11		.09	.13	.14	.13	.14	.17	.16	4
18-11	.11	.11	.09	.13	.15	.11	.15	.18	.17	5
18-12†	.10	.09	.08	.11	.13	.13	.13	.16	.15	6
18-13	.12	.12	.10	.13	.15	.13	.15	.18	.17	4
18-16	.09	.09	.07	.11	.13	.11	.13	.15	.14	1
18-19†	.10	.10	.08	.11	.13	.11	.13	.16	.15	10
18-20†	.09	.09	.07	.11	.13	.11	.13	.15	.15	5
18-22†	.09	.09	.07	.11	.13		.13	.16	.15	3
18-29†	.10		.08	.11	.13	.11	.13	.16	.15	5
18-420†*	.10	.10	.08	.12	.13	.12	.13	.16	.16	1
20-3†	.14	.13	.10	.15	.16	.15	.16	.24	.19	3

Where no weight is shown, insert is not available in that shell type.

† Inactive for new military design, but available for replacement or for non-military purposes.

\* "MS" number not assigned. Use "97" prefix in place of "MS" in completing catalog number.

Weights are for connectors with socket contacts.

Connectors with pin contacts weigh slightly less.

If a weight appears in the column, the shell is available.

Weight is shown in lbs.

# 97 series solder type availability and weight reference, cont.

Insert Number	Wall Receptacles MS3100	Cable Receptacles MS3101	Box Receptacles MS3102	Straight Plugs MS3106		Quick Disconnect Plugs MS3107		Angle Plugs MS3108		Total Contacts
	Solid Shell	Solid Shell	Solid Shell	Solid Shell	Split Shell	Solid Shell	Split Shell	Solid Shell	Split Shell	
	A	A	A	A	B	A	B	A	B	
20-4	.14	.13	.10	.15	.16	.15	.16	.24	.19	4
20-6†	.12	.11	.09	.13	.15	.14	.15	.23	.18	3
20-7	.13	.12	.09	.14	.15	.14	.15	.23	.18	8
20-8	.15	.14	.12	.16	.18	.16	.18	.26	.20	6
20-11†	.14	.13	.11	.15	.17	.15	.17	.25	.20	13
20-14	.16	.15	.13	.17	.19	.17	.19	.27	.21	5
20-15	.15	.14	.12	.16	.18	.16	.18	.26	.21	7
20-16	.14	.13	.10	.15	.16	.15	.16	.24	.19	9
20-17	.15	.14	.11	.16	.17	.16	.17	.25	.20	6
20-18	.14	.13	.11	.15	.17	.15	.17	.25	.19	9
20-19†	.16	.15	.13	.17	.19	.17	.19	.27	.21	3
20-21	.13	.12	.10	.14	.16	.14	.16	.24	.19	9
20-23†	.15	.14	.11	.16	.17	.16	.17	.25	.20	2
20-24	.15	.14	.11	.16	.17	.16	.17	.25	.20	4
20-27	.13	.12	.10	.14	.16	.14	.16	.24	.19	14
20-29	.14	.13	.11	.15	.17	.15	.17	.25	.20	17
20-33	.13	.12	.09	.14	.18	.18	.18	.23	.18	11
22-1†	.16	.16	.13	.18	.19	.18	.19	.27	.23	2
22-2	.17	.17	.14	.19	.20	.19	.20	.29	.24	3
22-4†	.21	.17	.14	.19	.20	.19	.20	.28	.23	4
22-5	.15	.14	.12	.17	.18	.17	.18	.26	.21	6
22-8†	.15	.14	.11	.16	.18	.16	.18	.26	.21	2
22-9	.15	.15	.12	.17	.18	.17	.18	.26	.21	3
22-10	.14	.13	.10	.15	.17	.15	.17	.25	.20	4
22-11	.14	.13	.10	.15	.17	.15	.17	.25	.20	2
22-12	.16	.16	.13	.18	.19	.18	.19	.27	.23	5
22-13†	.16	.15	.12	.17	.18	.17	.18	.27	.22	5
22-14	.15	.14	.11	.16	.18	.16	.18	.26	.21	19
22-15	.16	.14	.13	.17	.19	.17	.19	.27	.22	6
22-16†	.16	.15	.12	.17	.18	.17	.18	.27	.22	9
22-18	.14	.13	.10	.15	.17	.15	.17	.25	.20	8
22-19	.15	.14	.11	.16	.18	.16	.18	.26	.21	14
22-20†	.14	.14	.11	.16	.17	.16	.17	.25	.21	9
22-22	.19	.19	.16	.21	.26	.21	.22	.30	.25	4
22-23	.17	.16	.13	.18	.20	.18	.20	.28	.23	8
22-26†	.15	.14	.11						.19	7
22-27	.15	.15	.12	.17	.18	.17	.18	.27	.22	9
22-28†	.17	.16	.13	.18	.20	.18	.20	.28	.23	7
22-34†	.15	.15	.12	.17	.18	.17	.18	.26	.22	5
24-2	.20	.19	.16	.22	.24	.22	.24	.39	.29	7
24-5†	.18	.17	.14	.20	.22	.20	.22	.37	.27	16
24-6	.20	.19	.16	.22	.24	.22	.27	.39	.29	8
24-7	.19	.18	.14	.21	.23	.21	.23	.38	.27	16
24-9†	.22	.21	.17	.24	.25	.24	.25	.41	.30	2
24-10	.26	.25	.21	.28	.30	.28	.30	.45	.34	7

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