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# Amphenol® MIL-DTL-5015 and MIL-5015 Type Standard Cylindrical Connectors

12-020-18



# Amphenol

<b>Table of Contents</b>	<b>Page</b>
Introduction . . . . .	2
Amphenol® MIL-DTL-5015 and MIL-5015 Type Standard Cylindrical Connectors	
General Information, Class Designations . . . . .	3
MS-A, MS-C General Information . . . . .	4
MS3100A or C wall mounting receptacle . . . . .	5
MS3101A cable connecting plug . . . . .	6
MS3102A or C box mounting receptacle . . . . .	7
MS3106A straight plug . . . . .	8
MS3108A 90 degree plug . . . . .	9
MS-E/F General Information . . . . .	10
MS3100E/F wall mounting receptacle . . . . .	11
MS3101E/F cable connecting plug . . . . .	12
MS3102E box mounting receptacle . . . . .	13
MS3106E/F straight plug . . . . .	14
MS3108E 90 degree plug . . . . .	15
MS-R General Information . . . . .	16
MS3100R wall mounting receptacle . . . . .	17
MS3101R cable connecting plug . . . . .	18
MS3102R box mounting receptacle . . . . .	19
MS3106R straight plug . . . . .	20
Contact and Insert Arrangements . . . . .	21
MS/Standard insert arrangement charts . . . . .	22, 23
MS/Standard special insert arrangement chart . . . . .	24
MS/Standard alternate positioning . . . . .	25
MS/Standard contact arrangements . . . . .	26 – 37
MS/Standard special contact arrangements . . . . .	38 – 48
MS/Standard thermocouple contact arrangements . . . . .	49 – 53
MS/Standard Accessories . . . . .	54
MS3057A cable clamp, MS3420 sleeve . . . . .	55
10-305200 cable clamp, MS3420( )A sleeve . . . . .	56
10-350349 cable clamp, MS3420( )A sleeve . . . . .	57
10-74900 cable clamp . . . . .	58
Thru-bulkhead shells . . . . .	59, 60
Assembly instructions for 10-305200 and 10-74900 cable clamps . . . . .	61
Grommet/sealing plugs . . . . .	62
Plug protection caps . . . . .	63
Receptacle protection caps . . . . .	64
Dust caps . . . . .	65
Sealing gaskets . . . . .	66
Solder contacts . . . . .	67
Crimp contacts . . . . .	68
MS/Standard Application Tools . . . . .	69
MS/Standard How to Order . . . . .	70
Additional MS/Standard Connectors offered by Amphenol	
Matrix® MIL-DTL-5015 with crimp rear release contacts, MIL-5015 Type Modification Connectors, 97 Series (5015 type) Connectors, Pre-Earth FMLB Connectors . . . . .	71
Amphe-Power® 5015 Connectors (AC threaded series with high amperage RADSOK® contacts), MIL-5015 Connectors with PCB contacts . . . . .	72
Sales Office Listing	

This catalog covers Amphenol® MIL-DTL-5015 connectors and MIL-5015 type connectors. MIL-C-5015 has been replaced as follows:

Environmental Classes F and R are updated to and produced in strict accordance to MIL-DTL-5015.

Classes A, C and E are still produced, but are no longer listed on the qualified products listing (QPL).

Amphenol gives the user the largest selection of MS/Standard cylindrical connectors available in the market place.

This catalog is divided into three sections; the first section by service class, a second section by contacts and insert arrangements, and a third section for accessories. Each section is prefixed with an overview to assist the user in determining selections.

Should more information be required concerning the connectors covered in this publication, or if special application needs arise, please contact:

Amphenol Corporation  
Amphenol Industrial Operations  
40-60 Delaware Avenue  
Sidney, New York 13838-1395  
Telephone 607-563-5011  
Fax: 607-563-5157  
**[www.amphenol-industrial.com](http://www.amphenol-industrial.com)**

Now, also offered within the broad family of Amphenol interconnection products is the Amphenol®/Matrix® MIL-DTL-5015\* connector series which incorporates rear release crimp contacts. See page 71 for further description and for complete details ask for catalog 12-026.

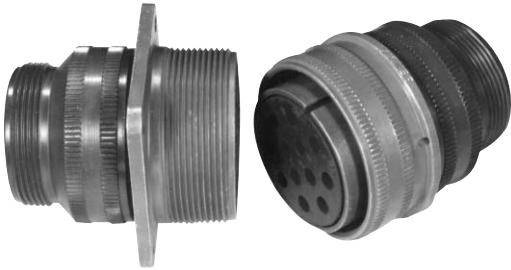
Also ask for these additional product catalogs:

- Amphenol Industrial Connector Brochure, SL-381, for an overview of the industrial family of connectors.
- Amphenol Catalog SL-100, which provides an overview of all products, military and industrial, offered through Amphenol Aerospace.
- Amphenol Amphe-Power® Brochure SL-391, for AC 5015 type connectors with RADSOK® high amperage contacts. See reference on page 72.

\* Note: MIL-C-5015 is superseded to MIL-DTL-5015 for all Amphenol/Matrix rear release crimp type connectors.

**Amphenol Aerospace operates Quality Systems that are Certified to ISO-9001 and AS-9100 by third party Registrars.**

# Amphenol® MIL-DTL-5015 and MIL-5015 Type Standard Cylindrical Connectors



MS-A, MS-C



MS-E/F



MS-R

## DESIGN CHARACTERISTICS

- Medium to heavy weight cylindrical
- Durable, field-proven design
- Environmental resistant
- Resilient inserts
- Operating voltage to 3000 VAC (RMS) at sea level
- Threaded couplings
- Single key/keyway shell polarization
- Cost effective

## CUSTOMER OPTIONS

- Five shell styles
- Nineteen shell sizes
- 305 contact arrangements from 1 to 104 circuits
- Solder or crimp contacts, sizes 16-0 accepting 22-0 AWG.
- Coaxial and thermocouple contact options
- Five class designations
- Alternate insert positioning
- Hermetic configurations available
- Zinc alloy plating (cadmium-free) available

MS connectors meet the latest performance requirements of MIL-DTL-5015. These connectors represent well-proven electrical capability at an acceptable cost for most equipment where durability is important.

MIL-DTL-5015 features threaded couplings and single key/keyway polarization, representing maximum simplicity in design. Applications include military ground support equipment, ordnance and shipboard installations.

Amphenol Industrial Operations manufactures five classes of connectors to meet different requirements. Class designations and brief descriptions are listed below.

- A – Solid Shell – for general, non-environmental applications.
- C – Pressurized – for use on pressurized bulkheads or pressure barriers; limits air leakage regardless of type and class of plug mated with them.
- E/F – Environmental Resisting with Strain Relief – designed for applications where the connector will be exposed to moisture, vibration, and rapid changes in pressure and temperature.
- R – Lightweight Environmental Resisting – shorter in length and lighter in weight than the E and F classes, the MS-R offers a high degree of reliability under adverse conditions: recommended for new design applications.

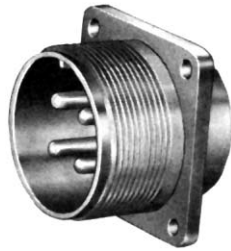
# MS/Standard MS-A and MS-C



**wall mounting receptacle**



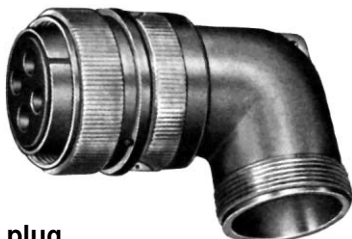
**cable connecting plug**



**box mounting receptacle**



**straight plug**



**90 degree plug**

## MS-A and MS-C

MS-A and MS-C class connectors perform many of the vital functions in powering, testing and ground support systems. Class A applications include communications equipment, computers and shipboard installations where mechanical forces and physical parameters are not subject to extreme or rapid environmental changes.

Class C connectors are most frequently used on pressurized bulkheads or pressure barriers at elevated altitudes or maritime applications. Air leakage is limited to one cubic inch per hour at a pressure differential of 30 lbs. per square inch.

### Shells:

Shell components are fabricated from high grade aluminum alloy. Electrically conductive cadmium plate finish with an olive drab chromate after-treat offers corrosion resistance.

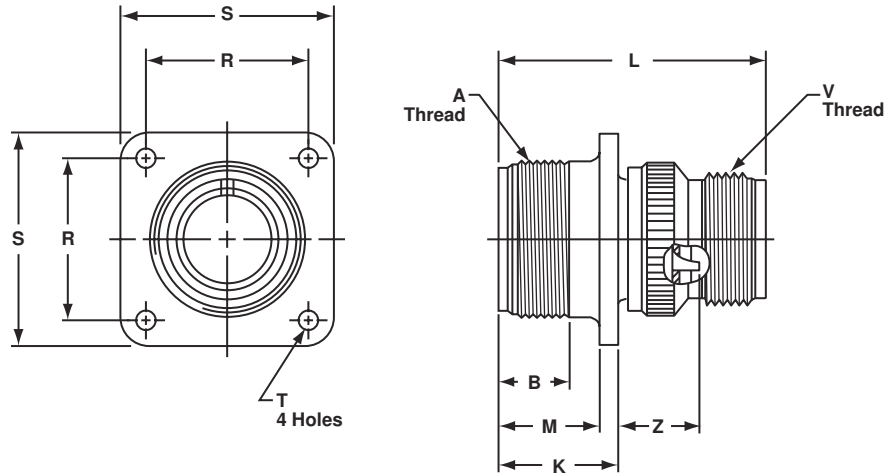
### Contacts:

Contacts are available in both solder and crimp versions. Pins and sockets are machined from copper alloy with a silver plated finish. Size 16 and 12 socket contacts incorporate a closed entry design. Refer to pages 49, 67 and 68 for additional contact information.

### Inserts:

Inserts are resilient neoprene, offering high dielectric strength, high arc resistance and resistance to vibration. Proprietary design permits pressurization of either pin or socket insert.

# MS/Standard MS3100A or C wall mounting receptacle



To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.

Shell Size	A Thread Class 2A	B Min Full Thread	K +.020 - .010	L ±.030	M +.010 - .000	R ±.005	S ±.031	T Dia. +.004 - .002	V Thread Class 2A	Z +.050 - .060
8S	.5000-28UNEF	.391	.672	1.391	.562	.594	.875	.120	.5000-28UNEF	.422
10S	.6250-24 UNF	.391	.672	1.468	.562	.719	1.000	.120	.5000-28UNEF	.422
10SL	.6250-24 UNF	.391	.672	1.468	.562	.719	1.000	.120	.6250-24NEF	.422
12S	.7500-20UNEF	.450	.672	1.468	.562	.812	1.094	.120	.6250-24NEF	.422
12	.7500-20UNEF	.625	.860	1.843	.750	.812	1.094	.120	.6250-24NEF	.672
14S	.8750-20UNEF	.450	.672	1.468	.562	.906	1.188	.120	.7500-20UNEF	.422
14	.8750-20UNEF	.625	.860	1.843	.750	.906	1.188	.120	.7500-20UNEF	.672
16S	1.0000-20UNEF	.450	.672	1.468	.562	.969	1.281	.120	.8750-20UNEF	.422
16	1.0000-20UNEF	.625	.860	1.843	.750	.969	1.281	.120	.8750-20UNEF	.672
18	1.1250-18NEF	.625	.891	1.938	.750	1.063	1.375	.120	1.0000-20UNEF	.641*
20	1.2500-18NEF	.625	.891	1.844	.750	1.156	1.500	.120	1.1875-18NEF	.641*
22	1.3750-18NEF	.625	.891	1.938	.750	1.250	1.625	.120	1.1875-18NEF	.641*
24	1.5000-18NEF	.625	.953	1.969	.812	1.375	1.750	.147	1.4375-18NEF	.578*
28	1.7500-18NS	.625	.953	2.188	.812	1.562	2.000	.147	1.4375-18NEF	.578*
32	2.0000-18NS	.625	1.031	2.157	.875	1.750	2.250	.173	1.7500-18NS	.500*
36	2.2500-16UN	.625	1.031	2.219	.875	1.938	2.500	.173	2.0000-18NS	.500*
40	2.5000-16UN	.625	1.031	2.188	.875	2.188	2.750	.173	2.2500-16UN	.500*
44***	2.7500-16UN	.625	1.031†	2.547	.875	2.375	3.000††	.173	2.5000-16UN	.751**
48***	3.0000-16UN	.625	1.031†	2.547	.875	2.625	3.000††	.173	3.0000-16UN	.751**

\* Increase Z dimension by .312 for size "0" contact only.

\*\* Increase Z dimension by .062 for size "0" contact only.

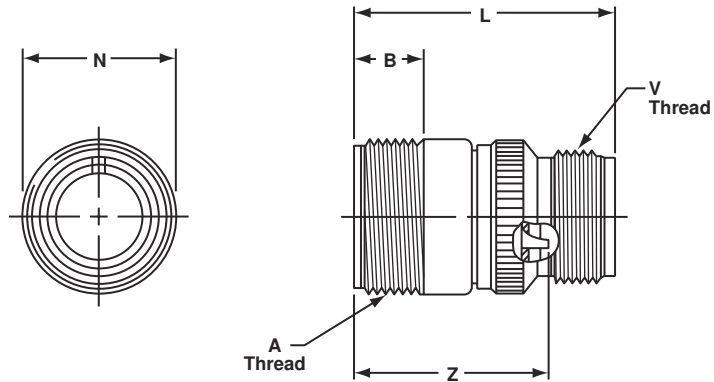
\*\*\* Available in proprietary version only.

† +.020 - .030

†† ±.020



# MS/Standard MS3101A cable connecting plug



To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.

Shell Size	A Thread Class 2A	B Min. Full Thread	L ±.030	N Dia. Max.	V Thread Class 2A	Z ±.040
8S	.5000-28UNEF	.406	1.390	.532	.5000-28UNEF	1.094
10S	.6250-24NEF	.406	1.468	.628	.5000-28UNEF	1.094
10SL	.6250-24NEF	.406	1.468	.755	.6250-24NEF	1.094
12S	.7500-20UNEF	.422	1.468	.755	.6250-24NEF	1.094
12	.7500-20UNEF	.656	1.843	.755	.6250-24NEF	1.532
14S	.8750-20UNEF	.391	1.468	.882	.7500-20UNEF	1.094
14	.8750-20UNEF	.625	1.843	.882	.7500-20UNEF	1.532
16S	1.0000-20UNEF	.391	1.468	1.010	.8750-20UNEF	1.094
16	1.0000-20UNEF	.625	1.843	1.010	.8750-20UNEF	1.532
18	1.1250-18NEF	.625	1.938	1.137	1.0000-20UNEF	1.532*
20	1.2500-18NEF	.625	1.844	1.264	1.1875-18NEF	1.532*
22	1.3750-18NEF	.625	1.938	1.392	1.1875-18NEF	1.532*
24	1.5000-18NEF	.625	1.969	1.519	1.4375-18NEF	1.532*
28	1.7500-18NS	.625	2.188	1.774	1.4375-18NEF	1.532*
32	2.0000-18NS	.625	2.157	1.996	1.7500-18NS	1.532*
36	2.2500-16UN	.625	2.219	2.251	2.0000-18NS	1.532*
40	2.5000-16UN	.625	2.188	2.506	2.2500-16UN	1.532*
44***	2.7500-16UN	.625	2.521	3.135	2.5000-16UN	1.782**

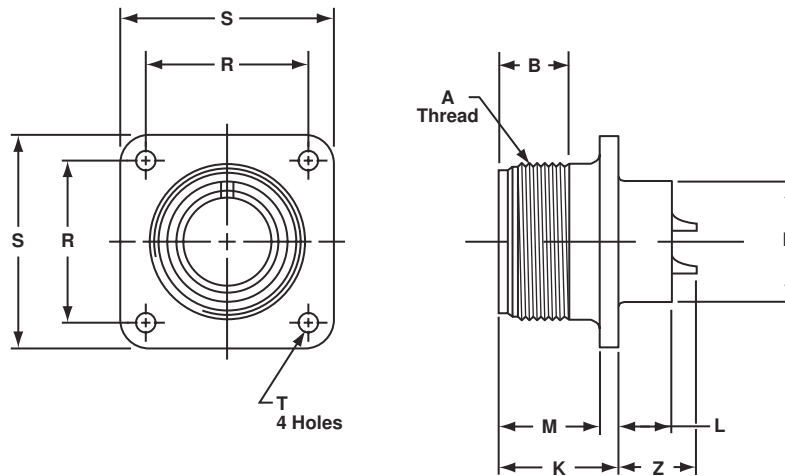
\* Increase Z dimension by .312 for size "0" contact only.

\*\* Increase Z dimension by .062 for size "0" contact only.

\*\*\* Available in proprietary version only.



# MS/Standard MS3102A or C box mounting receptacle

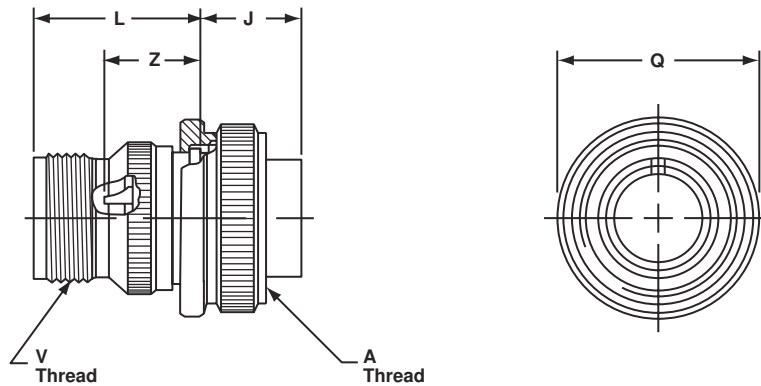


To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.

Shell Size	A Thread Class 2A	B Min Full Thread	K +.020 - .010	L +.000 - .010	M +.010 - .000	N Dia. +.010 - .000	R ±.005	S ±.031	T Dia. +.004 - .002	Z +.050 - .060
8S	.5000-28UNEF	.391	.672	.297	.562	.375	.594	.875	.120	.422
10S	.6250-24NEF	.391	.672	.297	.562	.500	.719	1.000	.120	.422
10SL	.6250-24NEF	.391	.672	.297	.562	.625	.719	1.000	.120	.422
12S	.7500-20UNEF	.450	.672	.297	.562	.625	.812	1.094	.120	.422
12	.7500-20UNEF	.625	.860	.484	.750	.625	.812	1.094	.120	.672
14S	.8750-20UNEF	.450	.672	.297	.562	.750	.906	1.188	.120	.422
14	.8750-20UNEF	.625	.860	.484	.750	.750	.906	1.188	.120	.672
16S	1.0000-20UNEF	.450	.672	.297	.562	.875	.969	1.281	.120	.422
16	1.0000-20UNEF	.625	.860	.484	.750	.875	.969	1.281	.120	.672
18	1.1250-18NEF	.625	.891	.453	.750	1.000	1.062	1.375	.120	.641*
20	1.2500-18NEF	.625	.891	.453	.750	1.125	1.156	1.500	.120	.641*
22	1.3750-18NEF	.625	.891	.453	.750	1.250	1.250	1.625	.120	.641*
24	1.5000-18NEF	.625	.953	.453	.812	1.375	1.375	1.750	.147	.578
28	1.7500-18NS	.625	.953	.453	.812	1.625	1.562	2.000	.147	.578*
32	2.0000-18NS	.625	1.031	.438	.875	1.875	1.750	2.250	.173	.500*
36	2.2500-16UN	.625	1.031	.438	.875	2.062	1.938	2.500	.173	.500*
40	2.5000-16UN	.625	1.031	.438	.875	2.312	2.188	2.750	.173	.500*
44***	2.7500-16UN	.625	1.063	.543†	.875	2.594	2.375	3.000††	.173	.768**
48***	3.0000-16UN	.625	1.063	.543†	.875	2.812	2.625	3.250††	.209	.769**

\* Increase Z dimension by .312 for size "0" contact only.  
\*\* Increase Z dimension by .062 for size "0" contact only.  
\*\*\* Available in proprietary version only.  
† +.020 - .030  
†† ±.020

# MS/Standard MS3106A straight plug

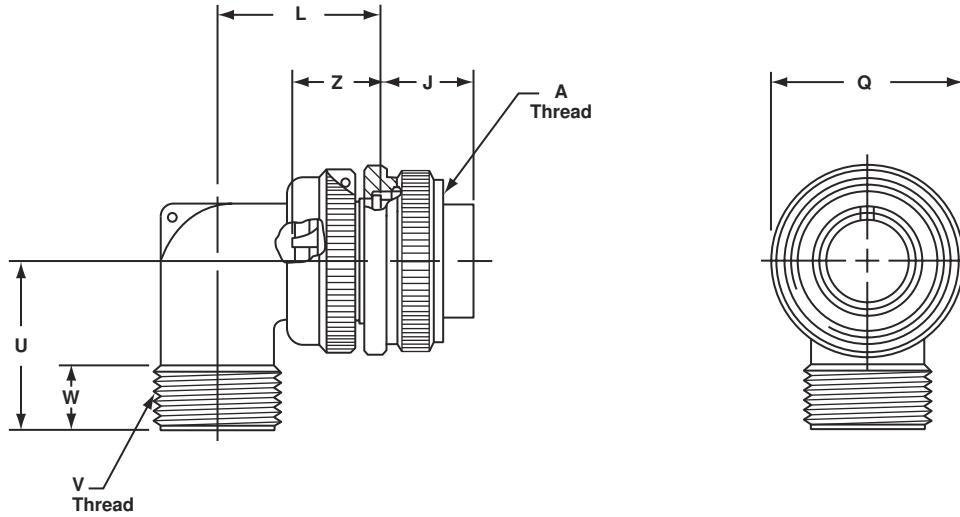


To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.  
All lockwire holes are .045 dia. min.

Shell Size	A Thread Class 2B	J ±.005	L ±.030	Q Dia. Max.	V Thread Class 2A	Z ±.045
8S	.5000-28UNEF	.531	.859	.741	.5000-28UNEF	.562
10S	.6250-24NEF	.531	.937	.869	.5000-28UNEF	.562
10SL	.6250-24NEF	.531	.937	.946	.6250-24NEF	.562
12S	.7500-20UNEF	.531	.937	.995	.6250-24NEF	.562
12	.7500-20UNEF	.719	1.124	.995	.6250-24NEF	.812
14S	.8750-20UNEF	.531	.937	1.123	.7500-20UNEF	.562
14	.8750-20UNEF	.719	1.124	1.123	.7500-20UNEF	.812
16S	1.0000-20UNEF	.531	.937	1.250	.8750-20UNEF	.562
16	1.0000-20UNEF	.719	1.124	1.250	.8750-20UNEF	.812
18	1.1250-18NEF	.719	1.219	1.333	1.0000-20UNEF	.812*
20	1.2500-18NEF	.719	1.125	1.461	1.1875-18NEF	.812*
22	1.3750-18NEF	.719	1.219	1.588	1.1875-18NEF	.812*
24	1.5000-18NEF	.719	1.251	1.715	1.4375-18NEF	.812*
28	1.7500-18NS	.719	1.470	1.968	1.4375-18NEF	.812*
32	2.0000-18NS	.719	1.439	2.209	1.7500-18NS	.812*
36	2.2500-16UN	.719	1.500	2.463	2.0000-18NS	.812*
40	2.5000-16UN	.719	1.469	2.719	2.2500-16UN	.812*
44***	2.7500-16UN	.719	1.818†	3.084	2.5000-16UN	1.063**
48***	3.3000-16UN	.719	1.818†	3.354	3.0000-16UN	1.063**

\* Increase Z dimension by .312 for size "0" contact only.  
\*\* Increase Z dimension by .062 for size "0" contact only.  
\*\*\* Available in proprietary version only.  
† +.020 -.030

# MS/Standard MS3108A 90 degree plug



To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.  
All lockwire holes are .045 dia. min.

Shell Size	A Thread Class 2B	J $\pm .005$	L Max.	Q Dia. Max.	U Max.	V Thread Class 2A	W	Z $\pm .045$
8S	.5000-28UNEF	.531	.896	.741	.750	.5000-28UNEF	.375	.562
10S	.6250-24NEF	.531	.927	.869	.750	.5000-28UNEF	.375	.562
10SL	.6250-24NEF	.531	.951	.946	.875	.6250-24NEF	.375	.562
12S	.7500-20UNEF	.531	.956	.995	.875	.6250-24NEF	.375	.562
12	.7500-20UNEF	.719	1.143	.995	.875	.6250-24NEF	.375	.812
14S	.8750-20UNEF	.531	1.120	1.123	1.000	.7500-20UNEF	.375	.562
14	.8750-20UNEF	.719	1.207	1.123	1.000	.7500-20UNEF	.375	.812
16S	1.0000-20UNEF	.531	1.146	1.250	1.062	.8750-20UNEF	.375	.562
16	1.0000-20UNEF	.719	1.332	1.250	1.062	.8750-20UNEF	.375	.812
18	1.1250-18NEF	.719	1.395	1.333	1.188	1.0000-20UNEF	.375	.812*
20	1.2500-18NEF	.719	1.645	1.461	1.250	1.1875-18NEF	.375	.812*
22	1.3750-18NEF	.719	1.645	1.588	1.312	1.1875-18NEF	.375	.812*
24	1.5000-18NEF	.719	1.896	1.715	1.438	1.4375-18NEF	.375	.812*
28	1.7500-18NS	.719	1.896	1.968	1.500	1.4375-18NEF	.375	.812*
32	2.0000-18NS	.719	2.118	2.209	1.750	1.7500-18NS	.438	.812*
36	2.2500-16UN	.719	2.176	2.463	1.875	2.0000-18NS	.500	.812*
40	2.5000-16UN	.719	2.301	2.719	2.031	2.2500-16UN	.500	.812*

\* Increase Z dimension by .312 for size "0" contact only.

# MS/Standard MS-E/F



wall mounting receptacle



cable connecting plug



box mounting receptacle



straight plug



90 degree plug

## MS-E & F

MS Class F connectors satisfy all the performance requirements of MIL-DTL-5015. Class E, environmental is also produced, but is no longer listed on the qualified products listing (QPL). These connectors are recommended for conditions where vibration, moisture, pressure and/or temperature are extreme. Strain relief is supplied on most shell sizes.

### Shells:

Shell components are fabricated from high grade aluminum alloy. The standard hardware plating is electrically conductive cadmium plated finish with an olive drab chromate after-treatment for corrosion resistance. Consult Amphenol, Sidney, NY for other plating options.

### Contacts:

Contacts are silver plated copper alloy for maximum corrosion resistance, maximum current carrying capacity and low millivolt drop. Size 16 and 12 socket contacts incorporate a closed entry design. Crimp and solder versions are available. Refer to pages 49, 67 and 68 for additional contact information.

### Inserts:

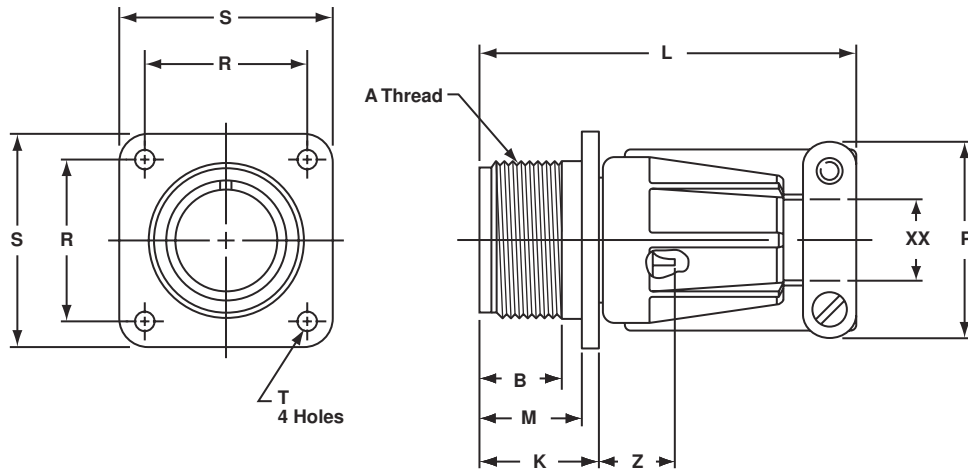
Resilient neoprene inserts provide an outstanding moisture barrier, high dielectric strength, and resistance to vibration. Either pin or socket insert can be pressurized.

### Strain Relief Clamp:

Strain relief clamps minimize tension at the solder well connection and provide a positive mechanical moisture seal. Complete field serviceability is possible with the strain relief clamp.



# MS/Standard MS3100E/F wall mounting receptacle

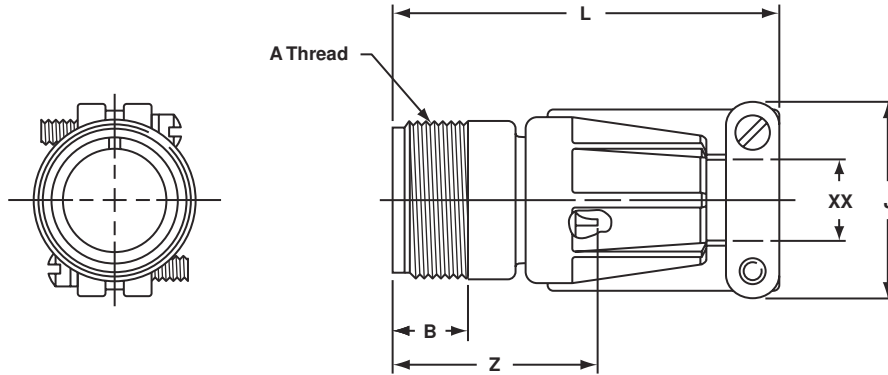


To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.

Shell Size	A Thread Class 2A	B Min. Full Thread	K $+0.020$ $-0.010$	L Max.	M $+0.010$ $-0.000$	P Max.	R $\pm 0.005$	S $\pm 0.010$	T Dia. $+0.004$ $-0.002$	Z* Max.	XX Min. Cable Clearance
10SL	.6250-24UNEF	.391	.672	2.129	.562	.896	.719	1.000	.120	.472	.281
12S	.7500-20UNEF	.450	.672	2.129	.562	.896	.812	1.094	.120	.472	.281
12	.7500-20UNEF	.625	.860	2.129	.750	.896	.812	1.094	.120	.722	.281
14S	.8750-20UNEF	.450	.672	2.201	.562	1.021	.906	1.188	.120	.472	.406
14	.8750-20UNEF	.625	.860	2.524	.750	1.021	.906	1.188	.120	.722	.406
16S	1.0000-20UNEF	.450	.672	2.201	.562	1.151	.969	1.281	.120	.472	.500
16	1.0000-20UNEF	.625	.860	2.524	.750	1.151	.969	1.281	.120	.722	.500
18	1.1250-18UNEF	.625	.891	2.596	.750	1.242	1.063	1.375	.120	.691	.531
20	1.2500-18UNEF	.625	.891	2.654	.750	1.499	1.156	1.500	.120	.691	.656
22	1.3750-18UNEF	.625	.891	2.654	.750	1.499	1.250	1.625	.120	.691	.740
24	1.5000-18UNEF	.625	.953	2.885	.812	1.781	1.375	1.750	.147	.628	.781
28	1.7500-18UNS	.625	.953	2.885	.812	1.781	1.562	2.000	.147	.628	.922
32	2.0000-18UNS	.625	1.031	2.943	.875	2.087	1.750	2.250	.173	.550	1.156
36	2.2500-16UN	.625	1.031	2.943	.875	2.281	1.938	2.500	.173	.550	1.250
40	2.5000-16UN	.625	1.031	3.068	.875	2.581	2.188	2.750	.173	.550	1.562

\* Increase Z dimension by .312 for size "0" contact only.

# MS/Standard MS3101E/F cable connecting plug

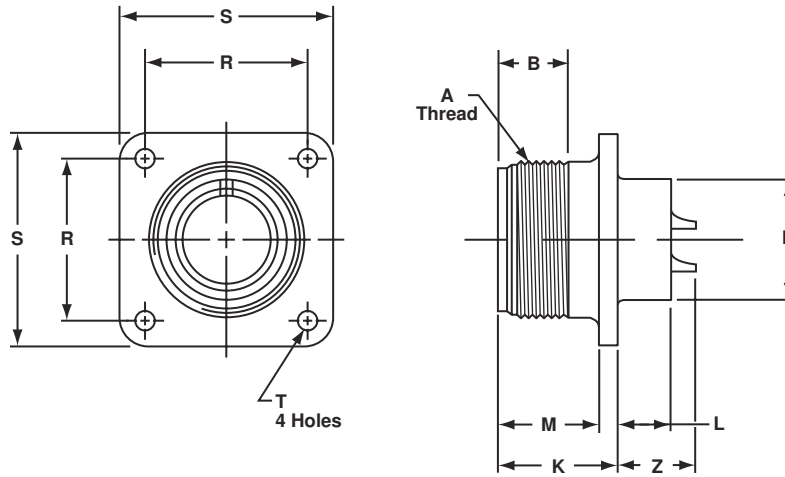


To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.

Shell Size	A Thread Class 2A	B Min. Full Thread	J Max.	L Max.	Z* Max.	XX Min. Cable Clearance
10SL	.6250-24UNEF	.406	.896	2.129	1.134	.281
12S	.7500-20UNEF	.422	.896	2.129	1.134	.281
12	.7500-20UNEF	.656	.896	2.129	1.572	.281
14S	.8750-20UNEF	.391	1.021	2.201	1.134	.406
14	.8750-20UNEF	.625	1.021	2.524	1.572	.406
16S	1.0000-20UNEF	.391	1.151	2.201	1.134	.500
16	1.0000-20UNEF	.625	1.151	2.524	1.572	.500
18	1.1250-18UNEF	.625	1.242	2.596	1.572	.531
20	1.2500-18UNEF	.625	1.499	2.654	1.572	.656
22	1.3750-18UNEF	.625	1.499	2.654	1.572	.740
24	1.5000-18UNEF	.625	1.781	2.885	1.572	.781
28	1.7500-18UNS	.625	1.781	2.885	1.572	.922
32	2.0000-18UNS	.625	2.087	2.943	1.572	1.156
36	2.2500-16UN	.625	2.281	2.943	1.572	1.250
40	2.5000-16UN	.625	2.581	3.068	1.572	1.562

\* Increase Z dimension by .312 for size "0" contact only.

# MS/Standard MS3102E box mounting receptacle

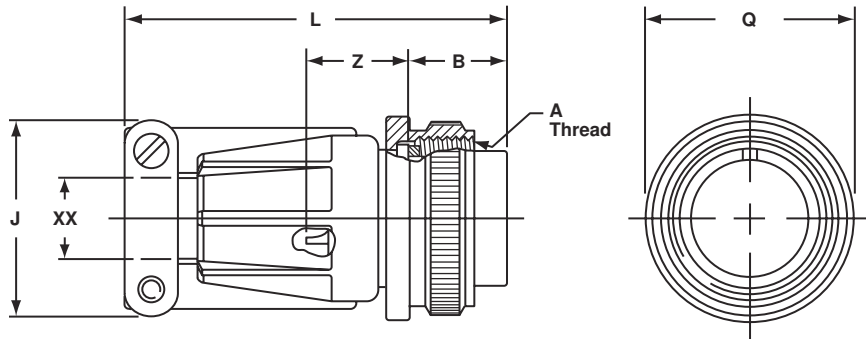


To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.

Shell Size	A Thread Class 2A	B Min. Full Thread	K +.020 - .010	L +.000 - .010	M +.010 - .000	N Dia. +.010 - .000	R ±.005	S ±.031	T Dia. +.004 - .002	Z +.050 - .060
8S	.5000-28UNEF	.391	.672	.297	.562	.375	.594	.875	.120	.422
10S	.6250-24NEF	.391	.672	.297	.562	.500	.719	1.000	.120	.422
10SL	.6250-24NEF	.391	.672	.297	.562	.625	.719	1.000	.120	.422
12S	.7500-20UNEF	.450	.672	.297	.562	.625	.812	1.094	.120	.422
12	.7500-20UNEF	.625	.860	.484	.750	.625	.812	1.094	.120	.672
14S	.8750-20UNEF	.450	.672	.297	.562	.750	.906	1.188	.120	.422
14	.8750-20UNEF	.625	.860	.484	.750	.750	.906	1.188	.120	.672
16S	1.0000-20UNEF	.450	.672	.297	.562	.875	.969	1.281	.120	.422
16	1.0000-20UNEF	.625	.860	.484	.750	.875	.969	1.281	.120	.672
18	1.1250-18NEF	.625	.891	.453	.750	1.000	1.062	1.375	.120	.641*
20	1.2500-18NEF	.625	.891	.453	.750	1.125	1.156	1.500	.120	.641*
22	1.3750-18NEF	.625	.891	.453	.750	1.250	1.250	1.625	.120	.641*
24	1.5000-18NEF	.625	.953	.453	.812	1.375	1.375	1.750	.147	.578*
28	1.7500-18NS	.625	.953	.453	.812	1.625	1.562	2.000	.147	.578*
32	2.0000-18NS	.625	1.031	.438	.875	1.875	1.750	2.250	.173	.500*
36	2.2500-16UN	.625	1.031	.438	.875	2.062	1.938	2.500	.173	.500*
40	2.5000-16UN	.625	1.031	.438	.875	2.312	2.188	2.750	.173	.500*

\* Increase Z dimension by .312 for size "0" contact only.

# MS/Standard MS3106E/F straight plug



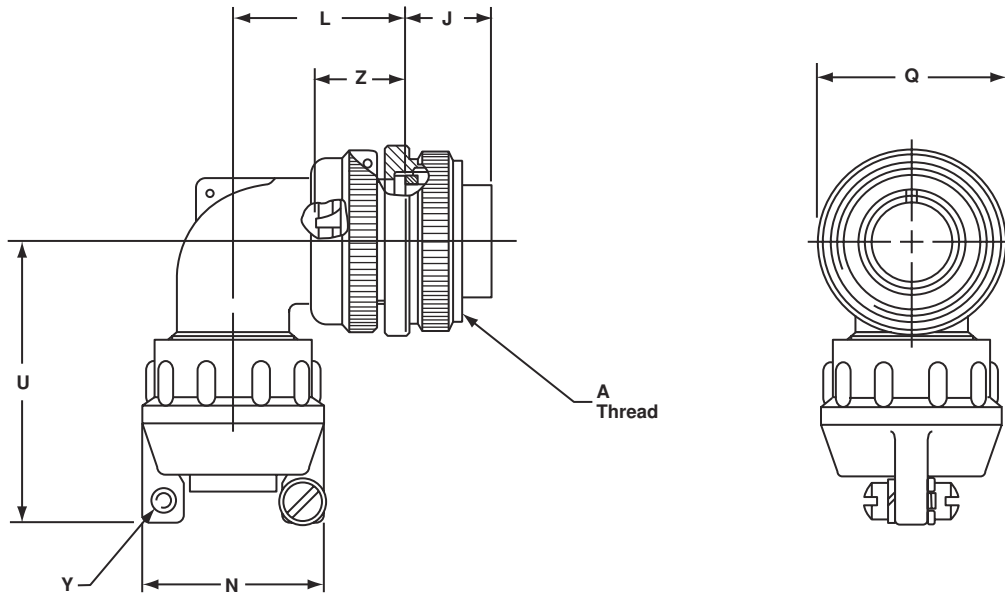
To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.  
All lockwire holes are .045 dia. min.

Shell Size	A Thread Class 2A	B ±.005	J Max.	L Max.	Q Max.	Z* ±.045	XX Min. Cable Clearance
10SL	.6250-24UNEF	.531	.896	2.129	.946	.607	.281
12S	.7500-20UNEF	.531	.896	2.129	.995	.607	.281
12	.7500-20UNEF	.719	.896	2.129	.995	.857	.281
14S	.8750-20UNEF	.531	1.021	2.201	1.123	.607	.406
14	.8750-20UNEF	.719	1.021	2.524	1.123	.857	.406
16S	1.0000-20UNEF	.531	1.151	2.201	1.250	.607	.500
16	1.0000-20UNEF	.719	1.151	2.524	1.250	.857	.500
18	1.1250-18UNEF	.719	1.242	2.596	1.333	.857	.531
20	1.2500-18UNEF	.719	1.499	2.654	1.461	.857	.656
22	1.3750-18UNEF	.719	1.499	2.654	1.588	.857	.740
24	1.5000-18UNEF	.719	1.781	2.885	1.715	.857	.781
28	1.7500-18UNS	.719	1.781	2.885	1.968	.857	.922
32	2.0000-18UNS	.719	2.087	2.943	2.209	.857	1.156
36	2.2500-16UN	.719	2.281	2.943	2.463	.857	1.250
40	2.5000-16UN	.719	2.581	3.068	2.718	.857	1.562

\* Increase Z dimension by .312 for size "0" contact only.



# MS/Standard MS3108E 90 degree plug



To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.  
All lockwire holes are .045 dia. min.

Shell Size	A Thread Class 2B	J ±.005	L Max.	N Max.	Q Dia. Max.	U Max.	Y Thread Class 2B	Z ±.045
8S	.5000-28UNEF	.531	.927	.807	.741	1.445	6-32NC	.562
10S	.6250-24NEF	.531	.927	.807	.869	1.445	6-32NC	.562
10SL	.6250-24NEF	.531	.951	.901	.946	1.508	6-32NC	.562
12S	.7500-20UNEF	.531	.956	.901	.995	1.508	6-32NC	.562
12	.7500-20UNEF	.719	1.143	.901	.995	1.508	6-32NC	.812
14S	.8750-20UNEF	.531	1.020	1.026	1.123	1.570	6-32NC	.562
14	.8750-20UNEF	.719	1.207	1.026	1.123	1.570	6-32NC	.812
16S	1.0000-20UNEF	.531	1.146	1.119	1.250	1.633	6-32NC	.562
16	1.1000-20UNEF	.719	1.333	1.119	1.250	1.633	6-32NC	.812
18	1.1250-18NEF	.719	1.395	1.229	1.333	1.759	6-32NC	.812*
20	1.2500-18NEF	.719	1.598	1.479	1.461	1.931	8-32NC	.812*
22	1.3750-18NEF	.719	1.598	1.479	1.588	1.993	8-32NC	.812*
24	1.5000-18NEF	.719	1.786	1.666	1.729	2.119	8-32NC	.812*
28	1.7500-18NS	.719	1.786	1.666	1.968	2.181	8-32NC	.812*
32	2.0000-18NS	.719	2.020	2.135	2.209	2.570	10-32NF	.812*
36	2.2500-16UN	.719	2.145	2.260	2.463	2.695	10-32NF	.812*
40	2.5000-16UN	.719	2.270	2.510	2.719	2.851	10-32NF	.812*

\* Increase Z dimension by .312 for size "0" contact only.

# MS/Standard MS-R



**wall mounting receptacle**



**cable connecting plug**



**box mounting receptacle**



**straight plug**

## MS-R

Specification requirements for greater reliability in a shorter, lighter weight environmental resistant connector led to the design of the MS-R. MS Class R connectors satisfy all the performance requirements of MIL-DTL-5015.

This low profile assembly was attained by moving the axial compression nut and grommet assembly forward and flush with the rear of the insert. The neoprene grommet, with its low coefficient of friction, assures easier threading of wire bundles and quicker assembly and serviceability of the unit. Molded webs in each wire hole insure a moisture barrier around each wire.

The addition of an "O" ring at the main joint of all MS3106R plugs provide a main joint seal supplementary to the interfacial seal, thus insuring a higher degree of reliability when connector halves from different sources are employed. MS-R types are recommended for new design applications.

### Shells:

Shell components are fabricated from high grade aluminum alloy. All components have the standard electrically conductive cadmium plated finish with an olive drab chromate after-treatment for corrosion resistance. Consult Amphenol, Sidney, NY for other plating options.

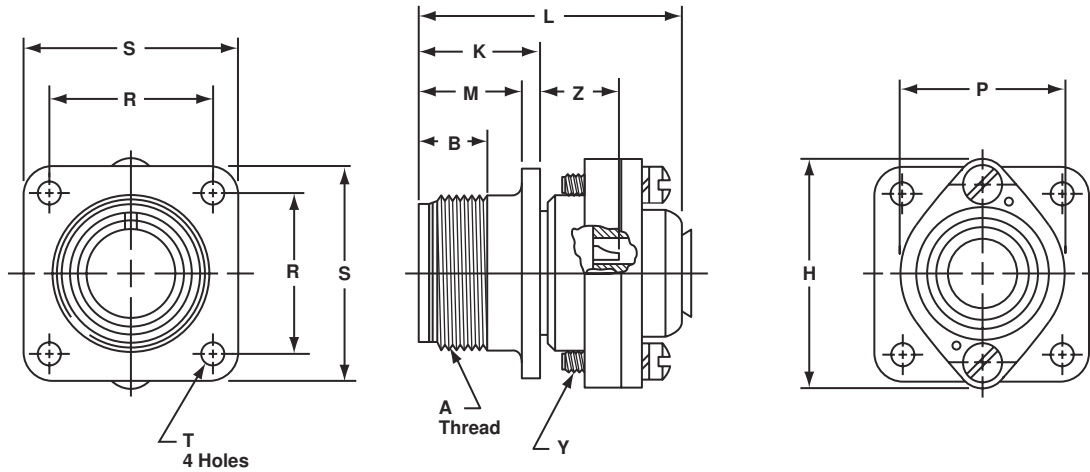
### Contacts:

Contacts are machined from copper alloy for maximum corrosion resistance, maximum current carrying capacity and low millivolt drop. Both crimp and solder versions are available. Refer to pages 49, 67 and 68 for additional contact information.

### Inserts:

Resilient neoprene inserts provide an outstanding moisture barrier, maximum vibration resistance and high dielectric strength. Either pin or socket insert can be pressurized.

# MS/Standard MS3100R wall mounting receptacle

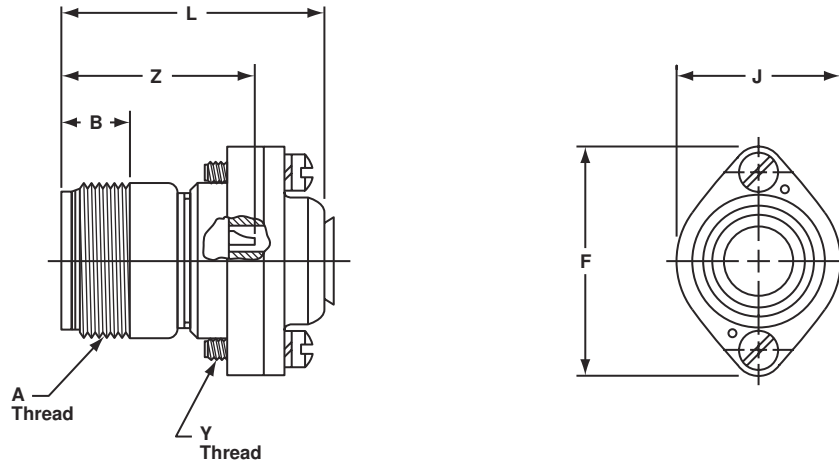


To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.  
All lockwire holes are .045 dia. min.

Shell Size	A Thread Class 2A	B Min. Full Thread	H Dia. Max.	K +.020 -0.010	L Max.	M +.010 -0.000	P Dia. Max.	R ±.005	S ±.031	Y Thread Class 2	T Dia. +.004 -0.002	Z +.050 -0.060
8S	.5000-28UNEF	.391	.959	.672	1.588	.562	.557	.594	.875	6-32NC	.120	.422
10S	.6250-24NEF	.391	1.026	.672	1.588	.562	.682	.719	1.000	6-32NC	.120	.422
10SL	.6250-24NEF	.391	1.120	.672	1.588	.562	.807	.719	1.000	6-32NC	.120	.422
12S	.7500-20UNEF	.450	1.120	.672	1.588	.562	.807	.812	1.094	6-32NC	.120	.422
12	.7500-20UNEF	.625	1.120	.860	1.931	.750	.807	.812	1.094	6-32NC	.120	.672
14S	.8750-20UNEF	.450	1.307	.672	1.588	.562	.932	.906	1.188	6-32NC	.120	.422
14	.8750-20UNEF	.625	1.307	.860	1.931	.750	.932	.906	1.188	6-32NC	.120	.672
16S	1.0000-20UNEF	.450	1.432	.672	1.588	.562	1.057	.969	1.281	6-32NC	.120	.422
16	1.0000-20UNEF	.625	1.432	.860	1.931	.750	1.057	.969	1.281	6-32NC	.120	.672
18	1.1250-18NEF	.625	1.557	.891	1.931	.750	1.182	1.063	1.375	6-32NC	.120	.641*
20	1.2500-18NEF	.625	1.744	.891	1.931	.750	1.291	1.156	1.500	8-32NC	.120	.641*
22	1.3750-18NEF	.625	1.869	.891	1.931	.750	1.432	1.250	1.625	8-32NC	.120	.641*
24	1.5000-18NEF	.625	1.994	.953	2.009	.812	1.557	1.375	1.750	8-32NC	.147	.578*
28	1.7500-18NS	.625	2.166	.953	2.009	.812	1.807	1.562	2.000	8-32NC	.147	.578*
32	2.0000-18NS	.625	2.541	1.031	2.072	.875	2.057	1.750	2.250	10-32NF	.173	.500*
36	2.2500-16UN	.625	2.729	1.031	2.072	.875	2.260	1.938	2.500	10-32NF	.173	.500*
40	2.5000-16UN	.625	2.979	1.031	2.072	.875	2.260	2.510	2.750	10-32NF	.173	.500*

\* Increase Z dimension by .312 for size "0" contact only.

# MS/Standard MS3101R cable connecting plug



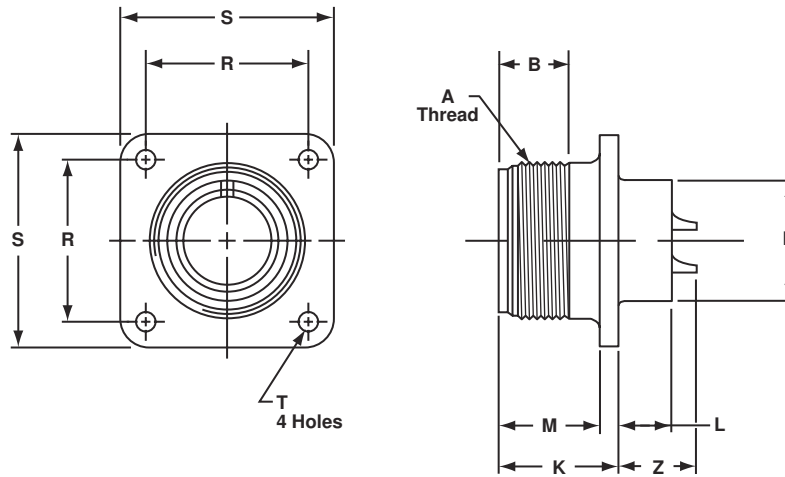
To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.  
All lockwire holes are .045 dia. min.

Shell Size	A Thread Class 2A	B Min. Full Thread	F Dia. Max.	J Dia. Max.	L Max.	Y Thread Class 2	Z ±.040
8S	.5000-28UNEF	.406	.959	.557	1.588	6-32NC	1.094
10S	.6250-24NEF	.406	1.026	.682	1.588	6-32NC	1.094
10SL	.6250-24NEF	.406	1.120	.807	1.588	6-32NC	1.094
12S	.7500-20UNEF	.422	1.120	.807	1.588	6-32NC	1.094
12	.7500-20UNEF	.656	1.120	.807	1.931	6-32NC	1.532
14S	.8750-20UNEF	.391	1.307	.932	1.588	6-32NC	1.094
14	.8750-20UNEF	.625	1.307	.932	1.931	6-32NC	1.532
16S	1.0000-20UNEF	.391	1.432	1.057	1.588	6-32NC	1.094
16	1.0000-20UNEF	.625	1.432	1.057	1.931	6-32NC	1.532
18	1.1250-18NEF	.625	1.557	1.182	1.931	6-32NC	1.532*
20	1.2500-18NEF	.625	1.744	1.291	1.931	8-32NC	1.532*
22	1.3750-18NEF	.625	1.869	1.432	1.931	8-32NC	1.532*
24	1.5000-18NEF	.625	1.994	1.557	2.009	8-32NC	1.532*
28	1.7500-18NS	.625	2.166	1.807	2.009	8-32NC	1.532*
32	2.0000-18NS	.625	2.541	2.057	2.072	10-32NF	1.532*
36	2.2500-16UN	.625	2.729	2.260	2.072	10-32NF	1.532*
40	2.5000-16UN	.625	2.979	2.510	2.072	10-32NF	1.532*

\* Increase Z dimension by .312 for size "0" contact only.



# MS/Standard MS3102R box mounting receptacle

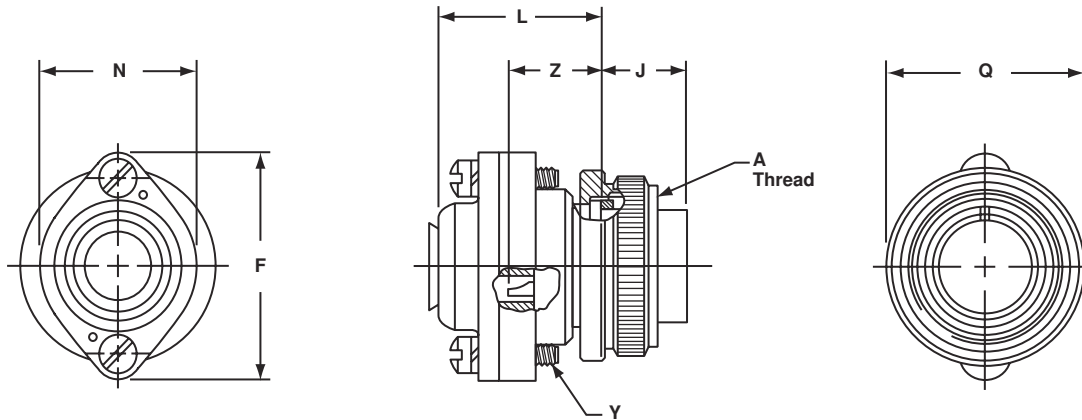


To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.

Shell Size	A Thread Class 2A	B Min. Full Thread	K +.020 - .010	L +.000 - .010	M +.010 - .000	N Dia. +.010 - .000	R ±.005	S ±.031	T Dia. +.004 - .002	Z +.050 - .060
8S	.5000-28UNEF	.391	.672	.297	.562	.375	.594	.875	.120	.422
10S	.6250-24NEF	.391	.672	.297	.562	.500	.719	1.000	.120	.422
10SL	.6250-24NEF	.391	.672	.297	.562	.625	.719	1.000	.120	.422
12S	.7500-20UNEF	.450	.672	.297	.562	.625	.812	1.094	.120	.422
12	.7500-20UNEF	.625	.860	.484	.750	.625	.812	1.094	.120	.672
14S	.8750-20UNEF	.450	.672	.297	.562	.750	.906	1.188	.120	.422
14	.8750-20UNEF	.625	.860	.484	.750	.750	.906	1.188	.120	.672
16S	1.0000-20UNEF	.450	.672	.297	.562	.875	.969	1.281	.120	.422
16	1.0000-20UNEF	.625	.860	.484	.750	.875	.969	1.281	.120	.672
18	1.1250-18NEF	.625	.891	.453	.750	1.000	1.062	1.375	.120	.641*
20	1.2500-18NEF	.625	.891	.453	.750	1.125	1.156	1.500	.120	.641*
22	1.3750-18NEF	.625	.891	.453	.750	1.250	1.250	1.625	.120	.641*
24	1.5000-18NEF	.625	.953	.453	.812	1.375	1.375	1.750	.147	.578*
28	1.7500-18NS	.625	.953	.453	.812	1.625	1.562	2.000	.147	.578*
32	2.0000-18NS	.625	1.031	.438	.875	1.875	1.750	2.250	.173	.500*
36	2.2500-16UN	.625	1.031	.438	.875	2.062	1.938	2.500	.173	.500*
40	2.5000-16UN	.625	1.031	.438	.875	2.312	2.188	2.750	.173	.500*

\* Increase Z dimension by .312 for size "0" contact only.

# MS/Standard MS3106R straight plug



To complete order number, see "how to order" pg. 70.  
For solder well data, see page 67.  
All lockwire holes are .045 dia. min.

Shell Size	A Thread Class 2B	F Dia. Max.	J $\pm .005$	L Max.	N Dia. Max.	Q Dia. Max.	Y Thread Class 2	Z $\pm .045$
8S	.5000-28UNEF	.959	.531	1.057	.557	.741	6-32NC	.562
10S	.6250-24NEF	1.026	.531	1.057	.682	.869	6-32NC	.562
10SL	.6250-24NEF	1.120	.531	1.057	.807	.946	6-32NC	.562
12S	.7500-20UNEF	1.120	.531	1.057	.807	.995	6-32NC	.562
12	.7500-20UNEF	1.120	.719	1.212	.807	.995	6-32NC	.812
14S	.8750-20UNEF	1.307	.531	1.057	.932	1.123	6-32NC	.562
14	.8750-20UNEF	1.307	.719	1.212	.932	1.123	6-32NC	.812
16S	1.0000-20UNEF	1.432	.531	1.057	1.057	1.250	6-32NC	.562
16	1.0000-20UNEF	1.432	.719	1.212	1.057	1.250	6-32NC	.812
18	1.1250-18NEF	1.557	.719	1.212	1.182	1.333	6-32NC	.812*
20	1.2500-18NEF	1.744	.719	1.212	1.291	1.461	8-32NC	.812*
22	1.3750-18NEF	1.869	.719	1.212	1.432	1.588	8-32NC	.812*
24	1.5000-18NEF	1.994	.719	1.291	1.557	1.715	8-32NC	.812*
28	1.7500-18NS	2.166	.719	1.291	1.807	1.968	8-32NC	.812*
32	2.0000-18NS	2.541	.719	1.353	2.057	2.209	10-32NF	.812*
36	2.2500-16UN	2.729	.719	1.353	2.260	2.463	10-32NF	.812*
40	2.5000-16UN	2.979	.719	1.353	2.510	2.719	10-32NF	.812*

\* Increase Z dimension by .312 for size "0" contact only.

**MS/Standard**  
contact and  
insert arrangements

# MS/Standard insert arrangements

Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
8S-1	A	1					1
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-1	A	3					3
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

Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
18-31	A	5					5
20-2	D	1	1				
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
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	

† 10SL-4 arrangement available only with pin contacts in receptacle and socket contacts in plug

# MS/Standard insert arrangements, cont.

Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
22-33	D/A	7					7
22-34	D	5				3	2
22-36	D/A	8				8	
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
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

Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
32-1	E/D	5	2			3	
32-2	E	5		3			2
32-3	D	9	1	2		2	4
32-4	A/D	14				2	12
32-5	D	2	2				
32-6	A	23		2	3	2	16
32-7	Inst./A	35				7	28
32-8	A	30				6	24
32-9	D	14		2			12
32-10	E/B/D/A	7		2	2		3
32-12	A/D	15				5	10
32-13	D	23				5	18
32-15	D	8	2			6	
32-16	A	23		2	3	2	16
32-17	D	4		4			
32-22	A	54					54
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
36-18	A	31		1	2	14	14
36-20	A	34			2	2	30
36-52	A	52					52
40-1	D	30				6	24
40-9	A	47			1	22	24
40-56	A	85					85
48-62	D	85					85

