

WPI

## WPI® Connectors Accessories and Cable Assemblies



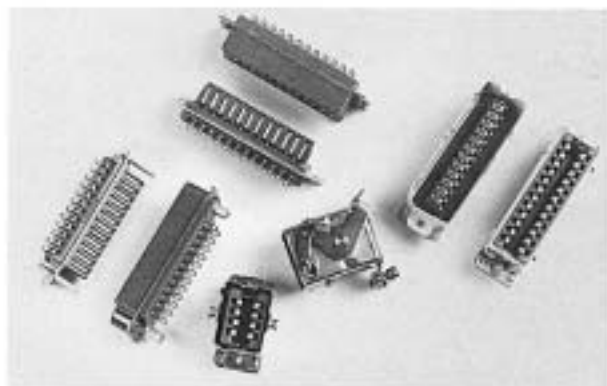
...featuring connector  
lines formerly  
manufactured by  
AMPHENOL



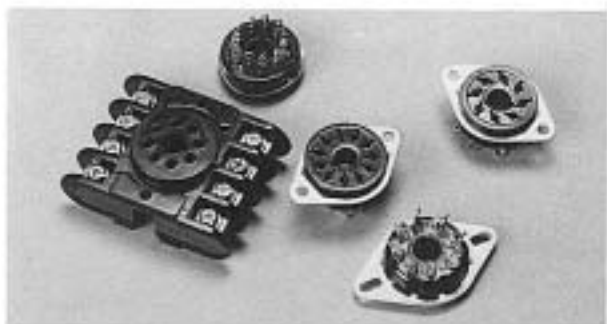
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**d-subminiature connectors  
rear-release & poke home®  
17 / 117 / 177 / 777 series  
formerly Amphenol  
section 1**



**Blue Ribbon  
rack & panel / cable to panel  
heavy duty connectors  
26 series  
formerly Amphenol  
section 2**



**tube / relay sockets  
77 / 78 & 146 series  
formerly Amphenol  
section 3**



**commercial plugs & accessories  
78 & 86 series  
formerly Amphenol  
section 4**

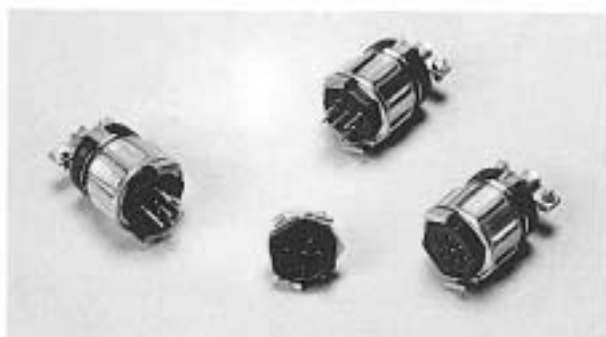
**DISTRIBUTORS . . . WPI® connectors are distributed internationally.  
For distributors in your area, contact WPI Marketing & Sales.**



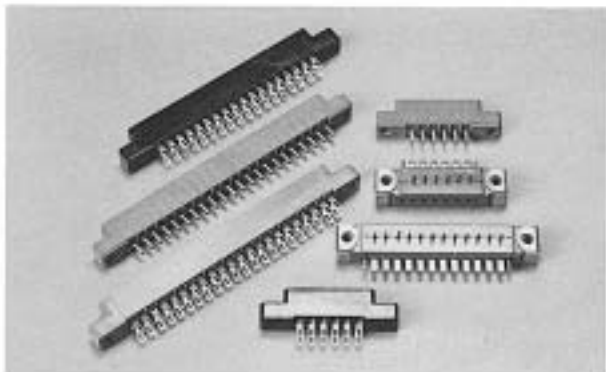
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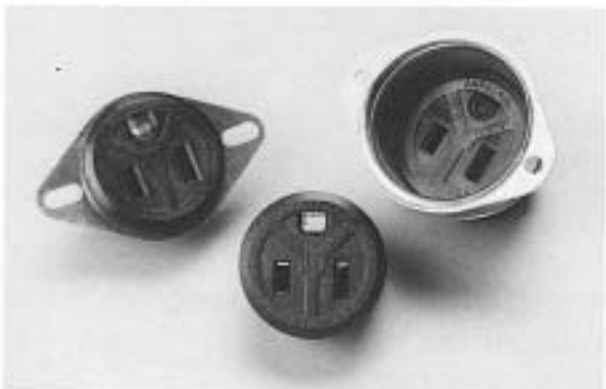
**microphone connectors**  
**80 / 91 & 91Q series**  
**formerly Amphenol**  
**section 5**



**hexagonal connectors**  
**126 series**  
**formerly Amphenol**  
**section 6**



**printed circuit connectors**  
**133 / 143 & 225 series**  
**formerly Amphenol**  
**section 7**



**125 volt plugs & receptacles**  
**160 series**  
**formerly Amphenol**  
**section 8**

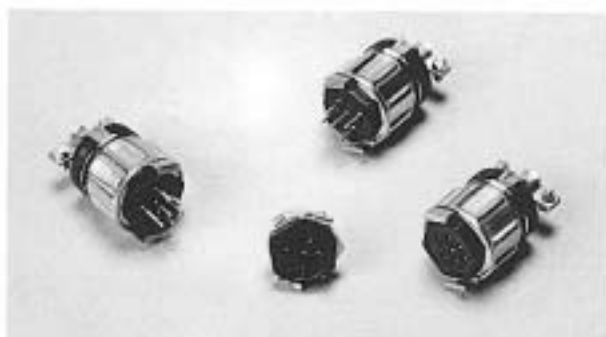
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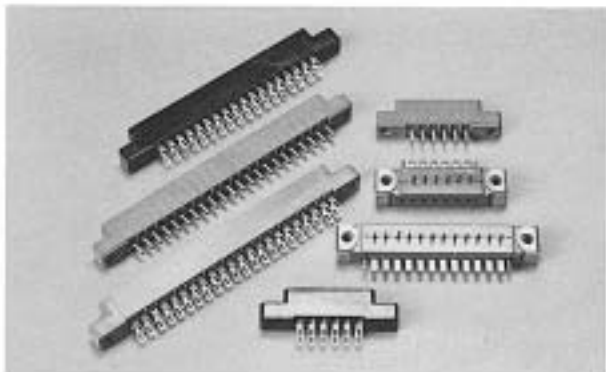
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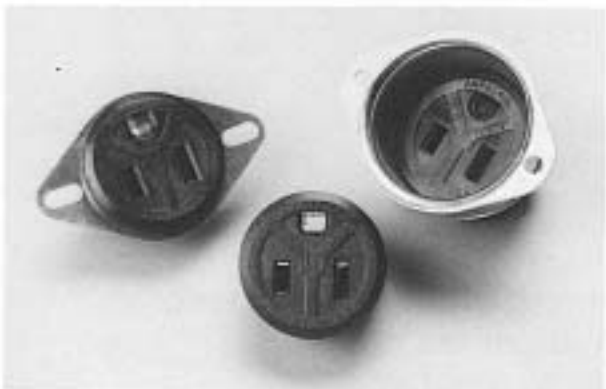
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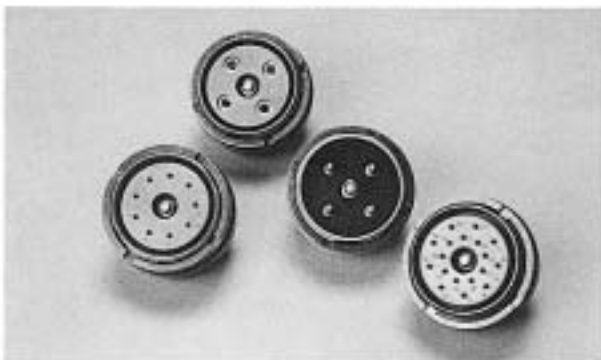
**strip, Tiny Tim® & Mighty-Mite®  
connectors**  
**220 / 221 / 222 & 223 series**  
**formerly Amphenol**  
**section 9**



**military audio connectors**  
**section 10**



**military u-type connectors**  
**section 11**



**military mw power connectors**  
**section 12**

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**military uw power connectors  
section 13**



**military connector accessories  
section 14**



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section 15**

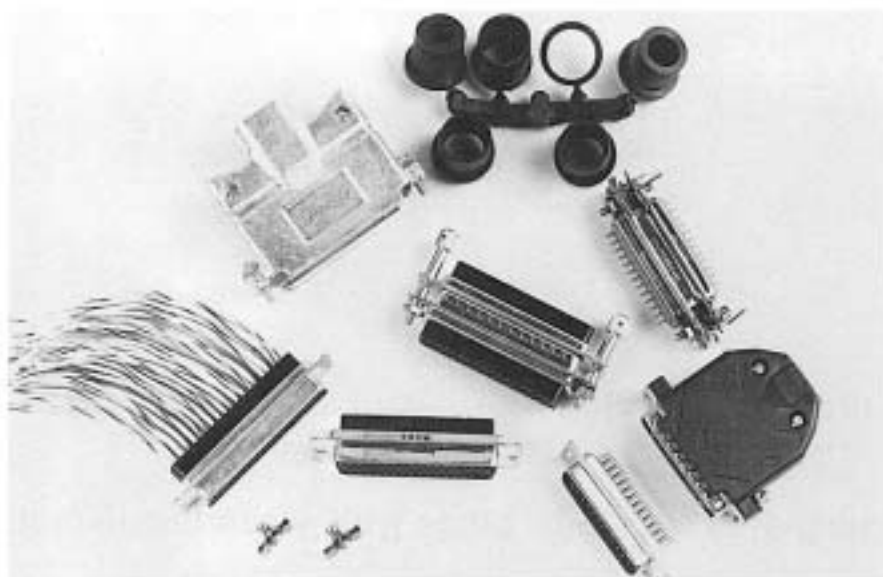


**termination tooling  
for 17 / 117 / 220 series  
section 16**

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# **WPI®**

## **d-subminiature connectors**



**interchangeable and intermateable connectors for  
commercial, industrial and military applications**

d-subminiature connectors have many advantages:

- lightweight / low profile
- economical
- "D" shape assures proper mating / polarization
- meet EIA standards RS 232C & RS 449 for data input/output
- high contact density
- rugged construction
- removable contacts for field repair
- high-speed crimp termination
- rack & panel / cable to cable / cable to panel applications
- intermateable / intermountable with competitive d-sub
- EMI / RFI shielding applications available



WPI - Salem Division  
23 Front Street, Salem, NJ 08079 U.S.A.  
phone (609) 935-7601  
fax (609) 935-0102 twx (510) 680-4750  
country code 1

# rear-release d-sub

## 17RR series

economical crimp connector • high volume production  
conforms EIA standard RS 232 C - RS 449

## rear-release d-sub connectors

Reliable, high density rear-release connectors offer superior features and low installation cost over other popular crimp and solder "D" types. Contacts are stamped and formed, and provide an insulation crimp feature which provides strain relief and insures the integrity of the crimp. The contacts are loaded with fingertip pressure and removed with a simple tool from the wired side (the rear of the connector). The contact and crimp are surrounded by the dielectric which eliminates the need for potting or sleeving to protect against shorting.

- Economical crimp contact (High speed stripper crimp tool and manual hand crimp tool available).
- Crimp contacts with insulation support feature.
- Shrouded contact and crimp protect against shorting or arcing.
- Removable contact.
- 2 pieces black thermoplastic UL 94 VO rated insulator.
- 5 shell sizes E, A, B, C, D.
- 5 configurations 9, 15, 25, 37, 50.
- Polarization by "D" shape.
- Hoods and locking accessories are available (see section 1 page 6-7)
- UL recognized (file #E115487)

## specifications

Shell: EM/ESD configuration.  
Bright tin plating and grounding indents on plug front shells.

Dielectric: Two piece black thermoplastic UL 94 VO rated

Contacts: stamped and formed  
Plating: .000020 inches gold over nickel

Crimp tensile strength:

20 AWG = 18 lb

22 AWG = 15 lb

24 AWG = 10 lb

26 AWG = 7 lb

30 AWG = 3 lb

Wire types: 20 to 30 AWG

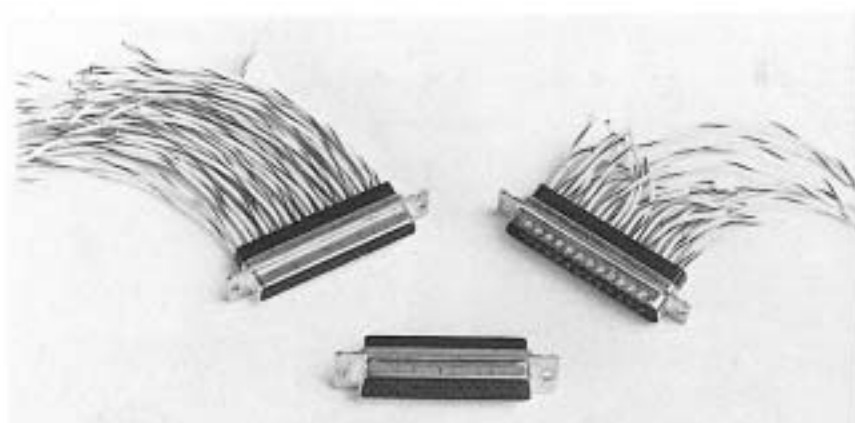
max. insulator over

diameter .050(1.27)

Temperature: -67°F (-55°C) to +257°F (+125°C)

Voltage rating: 500 VAC (sea level)

Current rating: 5A



## order information

Connector housings and contacts to be ordered separately

## tin plated housings, plugs with grounding indents

| Contacts | WPI Receptacle | AMP Equivalent | WPI Plug    | AMP Equivalent |
|----------|----------------|----------------|-------------|----------------|
| 9        | 177-RRE-9S     | 205203-3       | 777-RRE-9P  | 205204-4       |
| 15       | 177-RRR-15S    | 205205-2       | 777-RRR-15P | 205206-3       |
| 25       | 177-RRB-25S    | 207463-1       | 777-RRB-25P | 207464-2       |
| 37       | 177-RRC-37S    | 205209-2       | 777-RRC-37P | 205210-3       |
| 50       | 177-RRD-50S    | 205211-2       | 777-RRD-50P | 205212-3       |

## zinc plated housings with gold iridite

| Contacts | WPI Receptacle | AMP Equivalent | WPI Plug    | AMP Equivalent |
|----------|----------------|----------------|-------------|----------------|
| 9        | 117-RRE-9S     | 205203-1       | 117-RRE-9P  | 205204-1       |
| 15       | 117-RRR-15S    | 205205-1       | 117-RRR-15P | 205206-1       |
| 25       | 117-RRB-25S    | 205207-1       | 117-RRB-25P | 205208-1       |
| 37       | 117-RRC-37S    | 205209-1       | 117-RRC-37P | 205210-1       |
| 50       | 117-RRD-50S    | 205211-1       | 117-RRD-50P | 205212-1       |

## contacts

| Wire Size | Description | WPI Part Number<br>Bag of 100 | WPI Part Number<br>Reel of 10,000 |
|-----------|-------------|-------------------------------|-----------------------------------|
| 20-24     | Female      | 17-RRD1-F02-100               | 17-RRD1-F02-10K                   |
| 20-24     | Male        | 17-RRD1-M02-100               | 17-RRD1-M02-10K                   |
| 24-30     | Female      | 17-RRD2-F02-100               | 17-RRD2-F02-10K                   |
| 24-30     | Male        | 17-RRD2-M02-100               | 17-RRD2-M02-10K                   |

### NOTES:

1. FOR LEFT FEED REEL — 17 - RRDx - X02 - 10KG
2. CONSULT FACTORY FOR ALTERNATE PLATING REQUIREMENTS

WPI - Salem Division  
23 Front Street, Salem, NJ 08079 U.S.A.  
phone (609) 935-7601  
fax (609) 935-0102 twx (510) 680-4750  
country code 1



## rear-release d-sub

tin plated housings, plugs with  
grounding indents

| Contacts | WPI<br>Receptable | WPI<br>Plug     |
|----------|-------------------|-----------------|
| 9        | 177-RRE-9S-CTF    | 777-RRE-9P-CTF  |
| 15       | 177-RRA-15S-CTF   | 777-RRA-15P-CTF |
| 25       | 177-RRB-25S-CTF   | 777-RRB-25P-CTF |
| 37       | 177-RRC-37S-CTF   | 777-RRC-37P-CTF |
| 50       | 177-RRD-50S-CTF   | 777-RRD-50P-CTF |

## order information

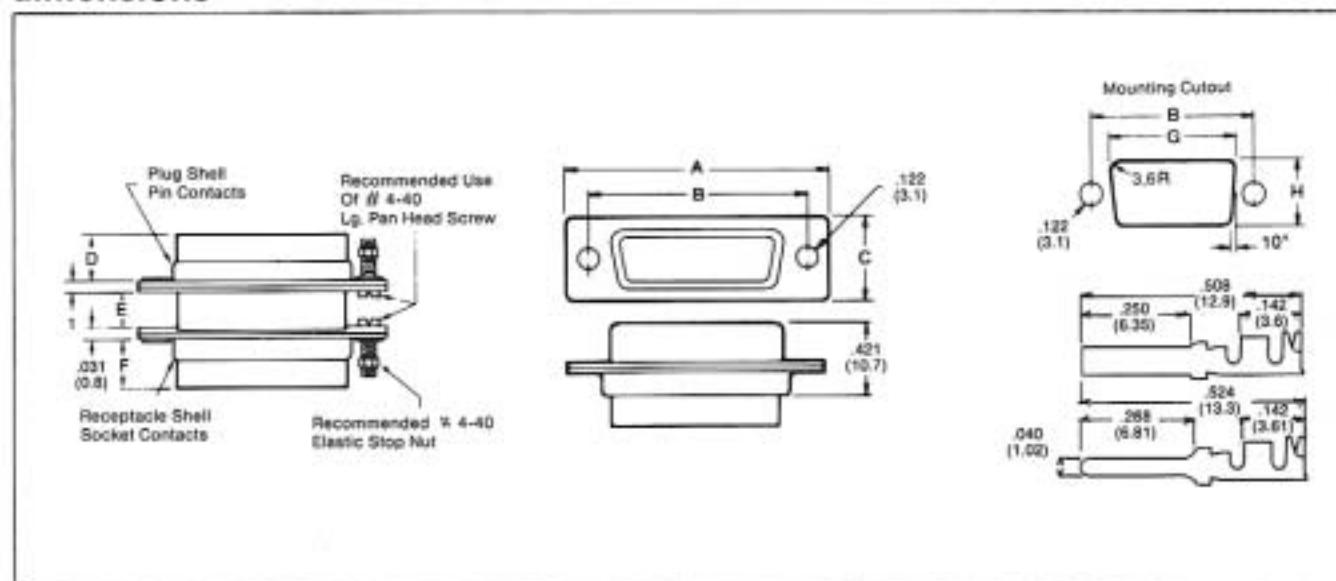
\* Contacts packaged with  
connector housings

## zinc plated housings with gold iridite

| Contacts | WPI<br>Receptable | WPI<br>Plug     |
|----------|-------------------|-----------------|
| 9        | 117-RRE-9S-CTF    | 117-RRE-9P-CTF  |
| 15       | 117-RRA-15S-CTF   | 117-RRA-15P-CTF |
| 25       | 117-RRB-25S-CTF   | 117-RRB-25P-CTF |
| 37       | 117-RRC-37S-CTF   | 117-RRC-37P-CTF |
| 50       | 117-RRD-50S-CTF   | 117-RRD-50P-CTF |

\* Gold flashed contacts included with housings  
Consult factory for alternate plating requirements

## dimensions



## contact arrangements



|   | A max.          | B                | C max.         | D             | E             | F             | G (Min)         |                 | H (Min)        |                |
|---|-----------------|------------------|----------------|---------------|---------------|---------------|-----------------|-----------------|----------------|----------------|
|   |                 |                  |                |               |               |               | Back Mtg        | Front Mtg       | Back Mtg       | Front Mtg      |
| E | 1.240<br>(31.5) | .984<br>(25)     | .516<br>(13.1) | .358<br>(9.1) | .232<br>(5.9) | .358<br>(9.1) | .799<br>(20.3)  | .831<br>(21.1)  | .449<br>(11.4) | .504<br>(12.8) |
| A | 1.567<br>(39.8) | 1.312<br>(33.3)  | .516<br>(13.1) | .358<br>(9.1) | .232<br>(5.9) | .358<br>(9.1) | 1.118<br>(28.4) | 1.161<br>(29.5) | .449<br>(11.4) | .504<br>(12.8) |
| B | 2.110<br>(53.6) | 1.852<br>(47.05) | .516<br>(13.1) | .358<br>(9.1) | .232<br>(5.9) | .358<br>(9.1) | 1.654<br>(42)   | 1.701<br>(43.2) | .449<br>(11.4) | .504<br>(12.8) |
| C | 2.756<br>(70)   | 2.500<br>(63.5)  | .516<br>(13.1) | .358<br>(9.1) | .232<br>(5.9) | .358<br>(9.1) | 2.303<br>(58.5) | 2.346<br>(59.6) | .449<br>(11.4) | .504<br>(12.8) |
| D | 2.661<br>(67.6) | 2.406<br>(61.1)  | .626<br>(15.9) | .358<br>(9.1) | .232<br>(5.9) | .358<br>(9.1) | 2.209<br>(56.1) | 2.283<br>(58)   | .559<br>(14.2) | .618<br>(15.7) |

All dimensions: inches (millimeters)



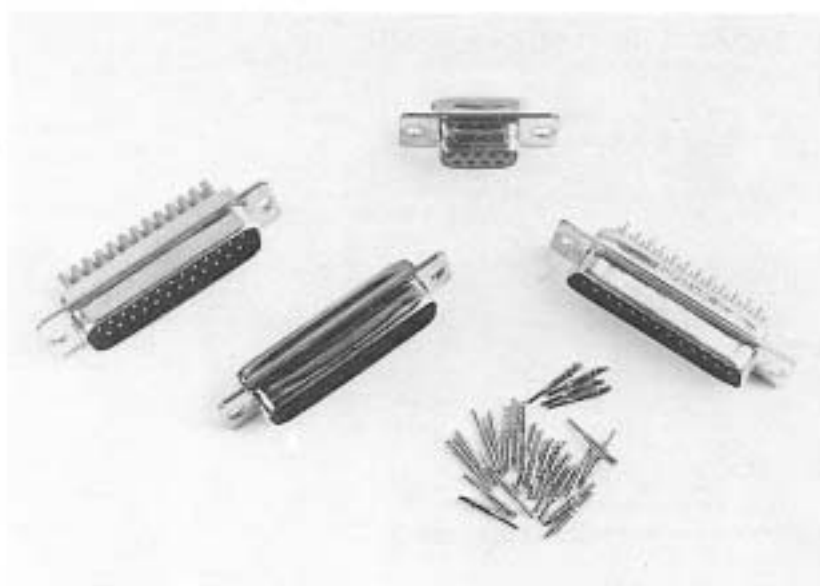
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# original Poke-Home® d-sub 17 series

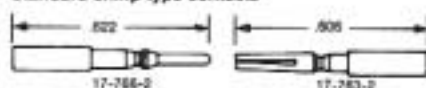
WPI original poke-home blocks can accept the wide range of contact types described on this page.

## Poke Home® d-sub connectors

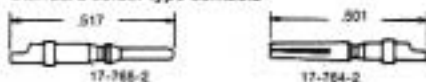
A removable contact type connector that meets most commercial requirements. The connector is available with crimp type contacts, solder type, and printed circuit types in both .023 and .040 inch diameter pintails. The .040 pintail is available in two lengths or with right angles.



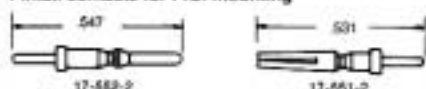
Standard crimp type contacts



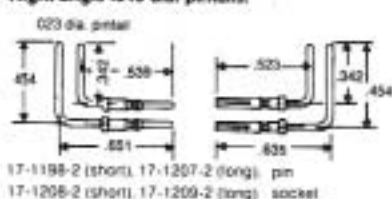
Standard solder type contacts



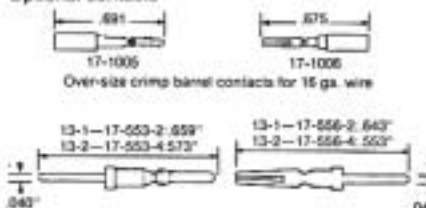
Pintail contacts for P.C. mounting



Right angle .040 dia. pintails.



Optional contacts



## specifications

Temperature ranges:  
-67°F (-55°C) to  
+257°F (+125°C)  
Current rating: 7.5 A  
Voltage rating:  
500 VAC (RMS) at sea level  
150 VAC (RMS) at 90,000 feet  
Dielectric: Zytel 101  
nylon per Mil M-20693

Shells: Steel clear chromated over zinc.  
Gold iridite finish available on  
request per QQP416A Type II  
Contacts: Crimp - gold over nickel plated  
copper alloy  
Solder - gold over nickel plated copper  
alloy  
Wire size: Solder: up to #20  
Crimp #20, #22, and #24AWG

## contact arrangements



| Number of Contacts | Receptacle | Receptacle with Float Bushings | Plug     |
|--------------------|------------|--------------------------------|----------|
| 9                  | 17-300-1   | 17-785                         | 17-301-1 |
| 15                 | 17-302-1   | 17-793                         | 17-303-1 |
| 25                 | 17-304-1   | 17-789                         | 17-325-1 |
| 37                 | 17-306-1   | 17-797                         | 17-327-1 |
| 50                 | 17-308-1   | 17-1001                        | 17-329-1 |

Connectors above have zinc plated clear chromate steel shells. For gold iridite finish, add one number to suffix. Examples: 17-300-2, 17-785. See page 5 for optional length in.

| Number of Contacts | Crimp Type<br>Includes specified number of standard crimp contacts |                   | Solder Type<br>Includes specified number of standard solder contacts |                   |
|--------------------|--------------------------------------------------------------------|-------------------|----------------------------------------------------------------------|-------------------|
|                    | Receptacle Socket Contacts                                         | Plug Pin Contacts | Receptacle Socket Contacts                                           | Plug Pin Contacts |
| 9                  | 17-10090-1                                                         | 17-20090-1        | 17-10090                                                             | 17-20090          |
| 15                 | 17-10150-1                                                         | 17-20150-1        | 17-10150                                                             | 17-20150          |
| 25                 | 17-10250-1                                                         | 17-20250-1        | 17-10250                                                             | 17-20250          |
| 37                 | 17-10370-1                                                         | 17-20370-1        | 17-10370                                                             | 17-20370          |
| 50                 | 17-10500-1                                                         | 17-20500-1        | 17-10500                                                             | 17-20500          |

| Number of Contacts | PC Board Type<br>Includes specified number of pintail contacts inserted in place |                                  |                                           |                                  |
|--------------------|----------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|----------------------------------|
|                    | Receptacle With 17-551-02 Socket Contacts                                        | Plug With 17-552-02 Pin Contacts | Receptacle With 17-556-XX Socket Contacts | Plug With 17-553-XX Pin Contacts |
| 9                  | 17-10090-11                                                                      | 17-20090-11                      | 17-10090-13-XX                            | 17-20090-13-XX                   |
| 15                 | 17-10150-11                                                                      | 17-20150-11                      | 17-10150-13-XX                            | 17-20150-13-XX                   |
| 25                 | 17-10250-11                                                                      | 17-20250-11                      | 17-10250-13-XX                            | 17-20250-13-XX                   |
| 37                 | 17-10370-11                                                                      | 17-20370-11                      | 17-10370-13-XX                            | 17-20370-13-XX                   |
| 50                 | 17-10500-11                                                                      | 17-20500-11                      | 17-10500-13-XX                            | 17-20500-13-XX                   |

Connectors can also be ordered without contacts for use with bulk packed contacts in wire automatic stripping machines. Contact sales office nearest you.



# EMI/ESD accommodation

All shells on housings can be supplied with bright tin finish and grounding indents on plug front shells to accommodate grounding.

Metal and plated plastic hoods and clamps are also available in many sizes to shield exposed terminations.

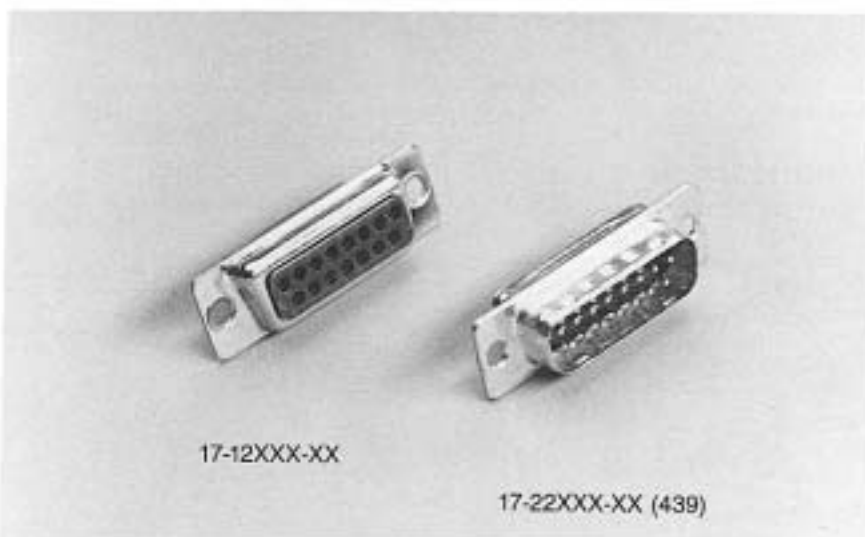
## order information housings

17-30X-3 for bright tin - receptables only

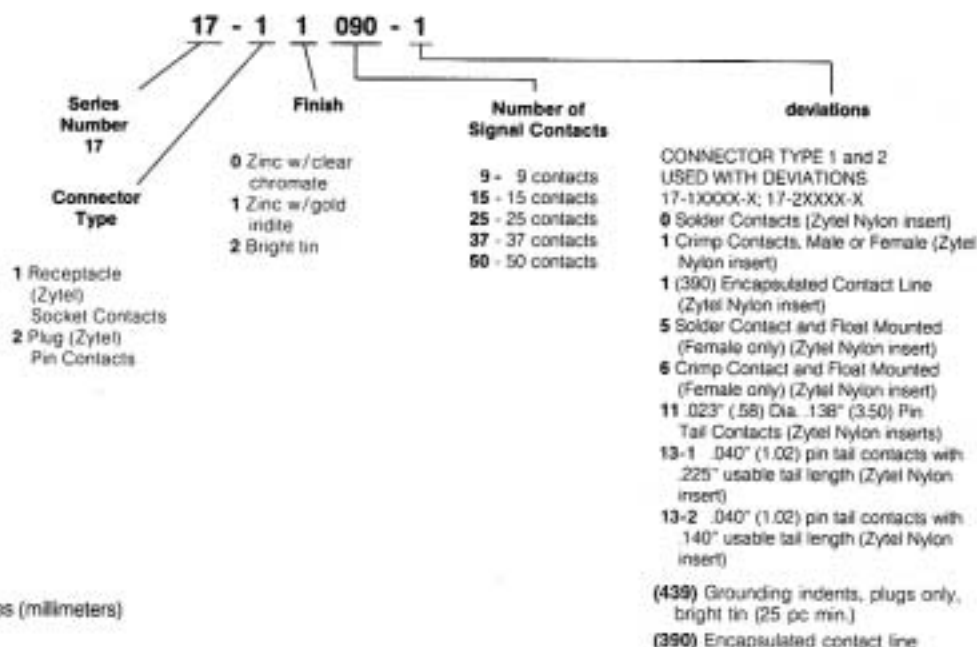
17-30X-3 (439) for bright tin and grounding indents - plugs only

## assembled connectors

17-12XXX-XX (receptacle) for bright tin  
17-22XXX-XX (439) (plugs) for bright tin with grounding indents



## order information



All dimensions: inches (millimeters)



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# WPI® d-subminiature accessories quick reference chart

| Accessories                                                                         | Page | Shell size Configuration                                                                   |                      | E 9       | A 15       | B 25       | C 37       | D 50       |
|-------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------|----------------------|-----------|------------|------------|------------|------------|
|    | 8    | Metallic straight cable housing with cable clamp                                           | clear finish         | 17-310-1  | 17-311-1   | 17-312-1   | 17-313-1   | 17-314-1   |
|                                                                                     |      |                                                                                            | Gold iridite         | 17-310-2  | 17-311-2   | 17-312-2   | 17-313-2   | 17-314-2   |
|    | 8    | 2 piece screw lock back shells with cable clamp (side or top cable entry)                  |                      | 17-1370   | 17-1371    | 17-1372    | 17-1373    | 17-1374    |
|   | 9    | Two piece plastic (UL) housing with cable clamp (side or top cable entry)                  | with standard screw  | 17-1587-6 | 17-1588-6  | 17-1589-6  | 17-1590-6  | 17-1591-6  |
|                                                                                     |      |                                                                                            | with long jack screw | 17-1587-9 | 17-1588-9  | 17-1589-9  | 17-1590-9  | 17-1591-9  |
|  | 9    | Die cast metal two-piece back shells - screw lock with internal cable clamp - top entry    |                      | 17-1657-9 | 17-1657-15 | 17-1657-25 | 17-1657-37 | 17-1657-50 |
|  | 10   | Plastic two piece back shells - screw lock with internal cable clamp - top entry           |                      | 17-1724-1 | 17-1725-1  | 17-1726-1  | 17-1727-1  | 17-1728-1  |
|  | 10   | Metalized plastic two piece back shells - screw lock with internal cable clamp - top entry |                      | 17-1724-2 | 17-1725-2  | 17-1726-2  | 17-1727-2  | 17-1728-2  |



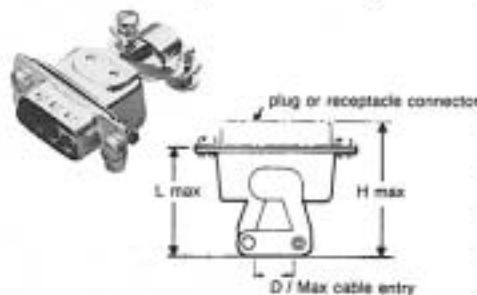
| Accessories                                                                         | Page                   | Shell size Configuration                 |              | E<br>9    | A<br>15 | B<br>25 | C<br>37 | D<br>50 |
|-------------------------------------------------------------------------------------|------------------------|------------------------------------------|--------------|-----------|---------|---------|---------|---------|
|    | 11                     | Spring Latch                             | clear finish | 17-529    | 17-529  | 17-529  | 17-529  | 17-770  |
|                                                                                     |                        |                                          | Gold Iridite | 17-847    | 17-847  | 17-847  | 17-847  | 17-850  |
|    | 11                     | Screw Lock Assembly                      |              | 17-768    | 17-768  | 17-768  | 17-768  | 17-769  |
|   | 11                     | Jack Socket                              |              | 17-893    | 17-893  | 17-893  | 17-893  | 17-893  |
|                                                                                     |                        | Jack Screw                               |              | 17-894    | 17-894  | 17-894  | 17-894  | 17-894  |
|                                                                                     |                        | Jack Assembly                            |              | 17-895    | 17-895  | 17-895  | 17-895  | 17-895  |
|  | Sec.<br>15<br>Pg.<br>2 | D-type RS232 connector field service kit |              | 17RR-232K |         |         |         |         |



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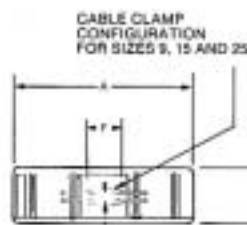
# d-subminiature accessories

## cable clamp assembly



| Shell size | Order No.             |                     | D           | H            | L            |
|------------|-----------------------|---------------------|-------------|--------------|--------------|
|            | clear chromate finish | gold iridite finish |             |              |              |
| E          | 17-310-1              | 17-310-2            | .406(10.30) | 1.358(34.50) | 1.094(27.80) |
| A          | 17-311-1              | 17-311-2            | .406(10.30) | 1.358(34.50) | 1.094(27.80) |
| B          | 17-312-1              | 17-312-2            | .594(15.10) | 1.390(35.30) | 1.126(28.60) |
| C          | 17-313-1              | 17-313-2            | .720(18.30) | 1.390(35.30) | 1.126(28.60) |
| D          | 17-314-1              | 17-314-2            | .720(18.30) | 1.390(35.30) | 1.126(28.60) |

## hoods with external clamps

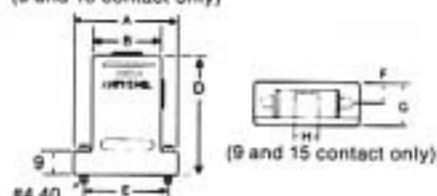


| Shell Size | Order No. | Dimensions   |              |             |              |              |             |             |
|------------|-----------|--------------|--------------|-------------|--------------|--------------|-------------|-------------|
|            |           | A Max.       | B            | C Max.      | D Max.       | E Max.       | F Max.      | G Max.      |
| E          | 17-1370   | 1.240(31.50) | 1.291(32.80) | .661(16.80) | 1.559(39.60) | 1.638(41.60) | .252(6.40)  | .181(4.60)  |
| A          | 17-1371   | 1.567(39.80) | 1.500(38.10) | .661(16.80) | 1.888(47.90) | 1.846(46.90) | .374(9.50)  | .220(5.60)  |
| B          | 17-1372   | 2.110(53.60) | 1.500(38.10) | .661(16.80) | 2.433(61.80) | 1.350(47.00) | .449(11.40) | .299(7.60)  |
| C          | 17-1373   | 2.756(70.00) | 1.594(40.50) | .661(16.80) | 3.272(83.10) | 2.134(54.20) | .650(16.50) | .358(9.10)  |
| D          | 17-1374   | 2.634(50.00) | 1.594(40.50) | .780(19.80) | 3.177(80.70) | 2.134(54.20) | .650(16.50) | .461(11.70) |

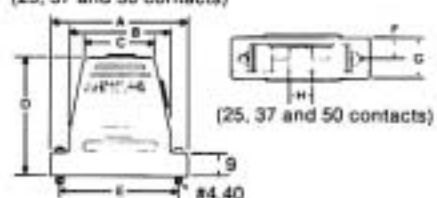
## hoods with internal cable clamps



(9 and 15 contact only)



(25, 37 and 50 contacts)

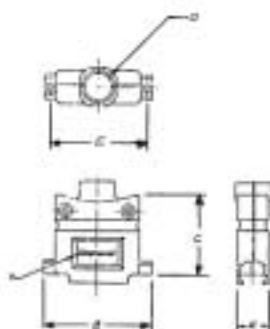


| Shell Size | Order No. Standard Screw | Order No. Long Jack Screw | A           | B           | C           | D           | E           | F          | G          | H          |
|------------|--------------------------|---------------------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|
| E          | 17-1587-6                | 17-1587-9                 | 1.358(34.5) | .760(19.3)  | —           | 1.610(40.9) | .984(25.0)  | .321(8.15) | .642(16.3) | .374(9.4)  |
| A          | 17-1588-6                | 17-1588-9                 | 1.689(42.9) | 1.087(27.6) | —           | 1.890(48.0) | 1.311(33.3) | .321(8.15) | .642(16.3) | .374(9.5)  |
| B          | 17-1589-6                | 17-1589-9                 | 2.228(56.6) | 1.626(41.3) | 1.230(32.5) | 1.890(48.0) | 1.850(47.0) | .312(8.15) | .252(6.3)  | .374(9.5)  |
| C          | 17-1590-6                | 17-1590-9                 | 2.874(73.0) | 2.222(57.7) | 1.402(35.6) | 2.091(53.1) | 2.500(63.5) | .321(8.15) | .252(6.3)  | .531(13.5) |
| D          | 17-1591-6                | 17-1591-9                 | 2.280(70.6) | 2.181(55.4) | 1.567(39.8) | 2.091(53.1) | 2.406(61.1) | .380(9.65) | .760(19.3) | .531(13.5) |

## die cast two piece backshell



screw lock with  
internal cable clamp  
- top entry

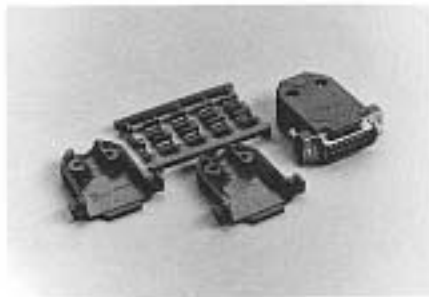


| Shell Size | Order No.  | A           | B            | C            | D           | E            | Cable Dia. Min/Max    |
|------------|------------|-------------|--------------|--------------|-------------|--------------|-----------------------|
| E          | 17-1657-9  | .620(15.75) | 1.225(31.12) | 1.465(37.21) | .400(10.16) | .984(25.00)  | .190/.350(4.83/8.89)  |
| A          | 17-1657-15 | .620(15.75) | 1.540(39.12) | 1.600(40.64) | .400(10.16) | 1.312(33.32) | .190/.350(4.83/8.89)  |
| B          | 16-1657-25 | .620(15.75) | 2.090(53.09) | 1.550(39.37) | .525(13.34) | 1.857(47.17) | .190/.460(4.83/11.68) |
| C          | 17-1657-37 | .620(15.75) | 2.750(69.85) | 1.800(45.72) | .725(18.42) | 2.500(63.50) | .300/.680(7.62/17.27) |
| D          | 17-1657-50 | .730(18.54) | 2.645(67.18) | 1.800(45.72) | .725(18.42) | 2.406(61.11) | .300/.680(7.62/17.27) |

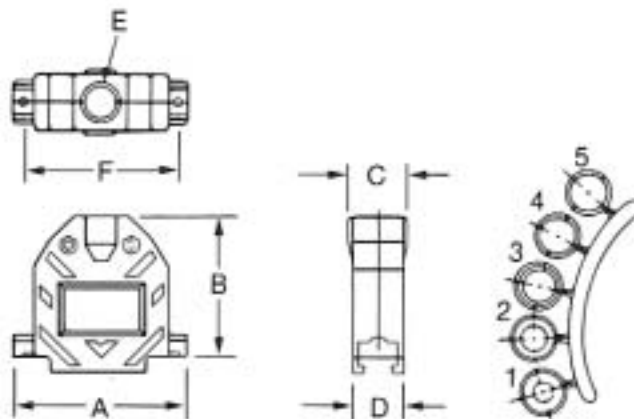


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## plastic two piece backshell

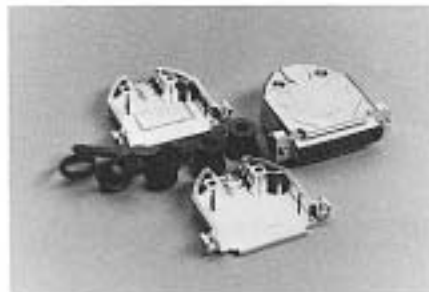


screw lock with  
internal cable clamp  
- top entry

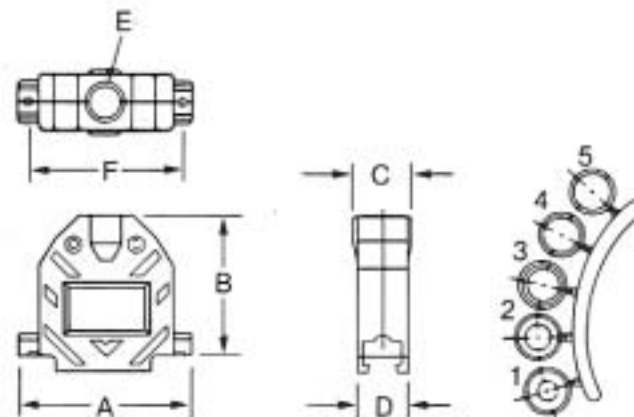


| Shell Size | Order No. | A            | B            | C           | D           | E           | F            | Cable Dia. Min/Max    |
|------------|-----------|--------------|--------------|-------------|-------------|-------------|--------------|-----------------------|
| E          | 17-1724-1 | 1.225(31.12) | 1.397(35.48) | .640(16.26) | .640(16.26) | .400(10.16) | .984(25.00)  | .190/.350(4.83/8.89)  |
| A          | 17-1725-1 | 1.540(39.12) | 1.526(38.76) | .640(16.26) | .640(16.26) | .400(10.16) | 1.312(33.32) | .190/.350(4.83/8.89)  |
| B          | 17-1726-1 | 2.090(53.09) | 1.655(42.04) | .710(18.03) | .640(16.26) | .522(13.26) | 1.857(47.17) | .190/.460(4.83/11.68) |
| C          | 17-1727-1 | 2.730(69.34) | 1.850(47.00) | .920(23.37) | .640(16.26) | .725(18.42) | 2.500(63.50) | .300/.680(7.62/17.27) |
| D          | 17-1728-1 | 2.645(67.18) | 1.717(43.61) | .882(22.40) | .750(19.05) | .725(18.42) | 2.406(61.11) | .300/.680(7.62/17.27) |

## metalized plastic two piece backshell



screw lock with  
internal cable clamp  
- top entry

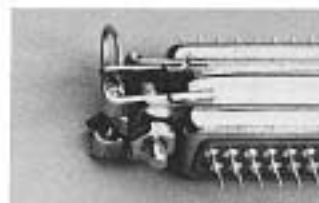


| Shell Size | Order No. | A            | B            | C           | D           | E           | F            | Cable Dia. Min/Max    |
|------------|-----------|--------------|--------------|-------------|-------------|-------------|--------------|-----------------------|
| E          | 17-1724-2 | 1.225(31.12) | 1.397(35.48) | .640(16.26) | .640(16.26) | .400(10.16) | .984(25.00)  | .190/.350(4.83/8.89)  |
| A          | 17-1725-2 | 1.540(39.12) | 1.526(38.76) | .640(16.26) | .640(16.26) | .400(10.16) | 1.312(33.32) | .190/.350(4.83/8.89)  |
| B          | 17-1726-2 | 2.090(53.09) | 1.655(42.04) | .710(18.03) | .640(16.26) | .522(13.26) | 1.857(47.17) | .190/.460(4.83/11.68) |
| C          | 17-1727-2 | 2.730(69.34) | 1.850(47.00) | .920(23.37) | .640(16.26) | .725(18.42) | 2.500(63.50) | .300/.680(7.62/17.27) |
| D          | 17-1728-2 | 2.645(67.18) | 1.717(43.61) | .882(22.40) | .750(19.05) | .725(18.42) | 2.406(61.11) | .300/.680(7.62/17.27) |

## spring latch

Material:

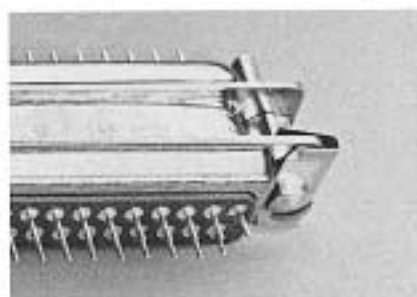
Steel clear chromate finish or gold  
iridite finish each order no. includes  
2 of each style



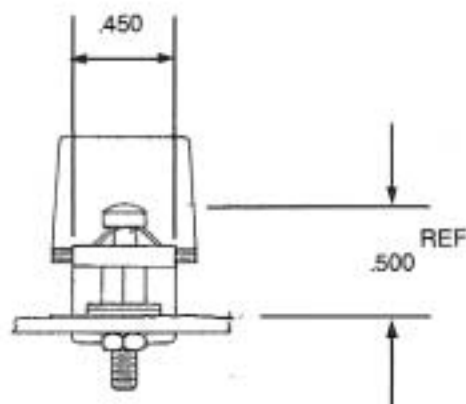
| Size    | Order No.: |        | A          | B          | C          | D          | E          | F          |
|---------|------------|--------|------------|------------|------------|------------|------------|------------|
|         | clear      | gold   |            |            |            |            |            |            |
| E,A,B,C | 17-529     | 17-847 | .567(14.4) | .614(15.6) | .484(12.3) | .614(15.6) | .484(12.3) | .567(14.4) |
| D       | 17-770     | 17-850 | .681(17.3) | .614(15.6) | .610(15.5) | .614(15.6) | .610(15.5) | .681(17.3) |

All dimensions: inches (millimeters)

## screw lock assembly - provides positive locking

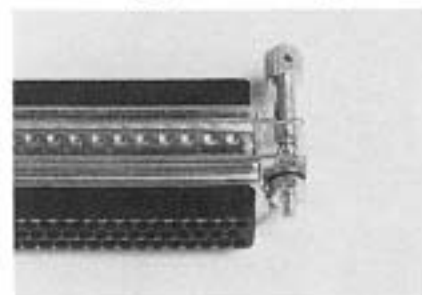


Stainless steel passivated

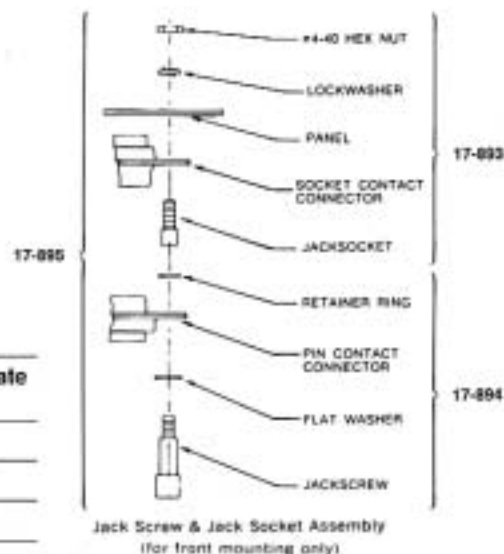


| Shell Size       | Order No. |
|------------------|-----------|
| E, A, B<br>C & D | 17-768    |

## screw type locking assemblies to WPI design

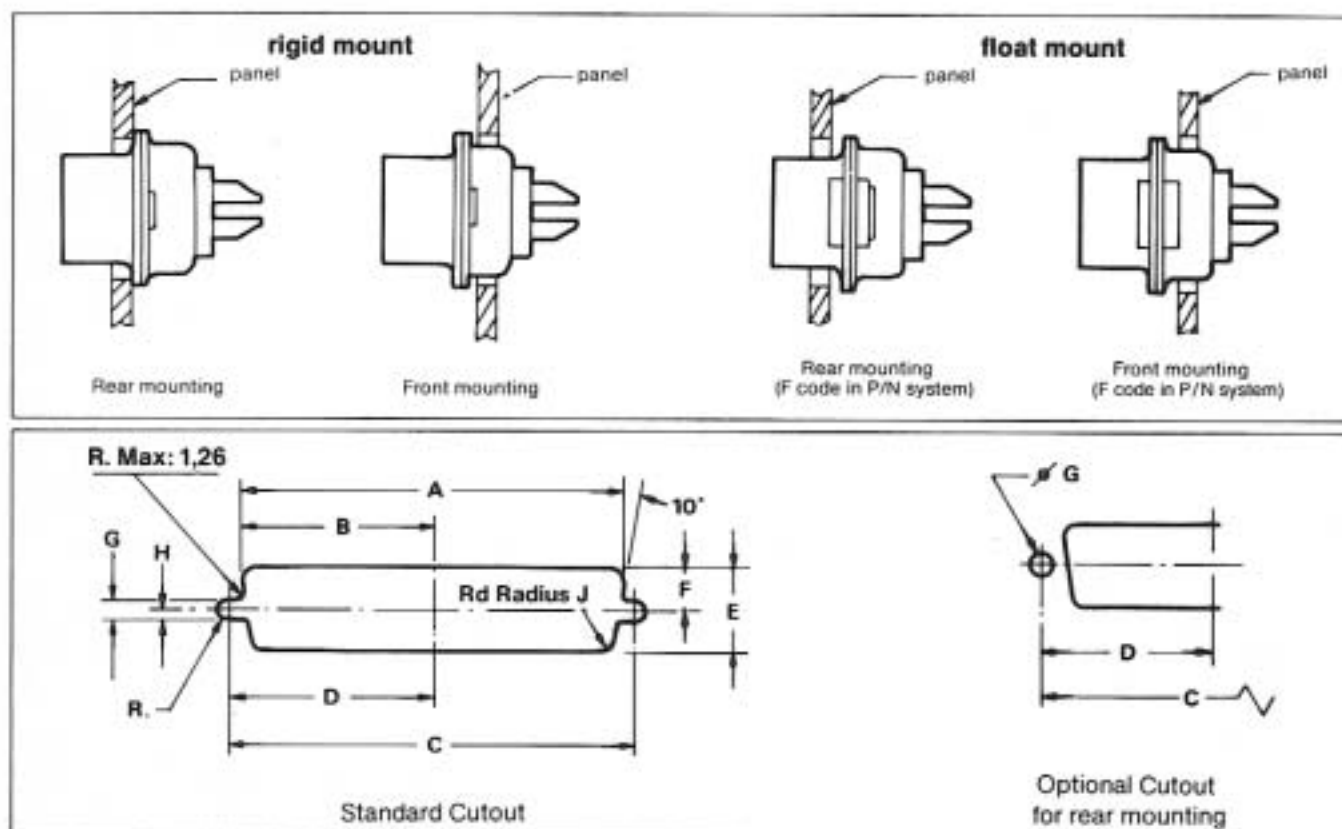


|                                                           | Clear Chromate Finish |
|-----------------------------------------------------------|-----------------------|
| Jack Socket (includes 2 sockets, lock washers & nuts)     | 17-893                |
| Jack Screw (includes 2 screws, washers & retaining rings) | 17-894                |
| Complete Assembly (includes both of above)                | 17-895                |



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# d-subminiature panel cutouts



| Config-<br>uration | Mount<br>type | Mounting<br>Method | A<br>± .008<br>(± 0.2) | B<br>± .008<br>(± 0.2) | C<br>± .008<br>(± 0.2) | D<br>± .008<br>(± 0.2) | E<br>± .008<br>(± 0.2) | F<br>± .008<br>(± 0.2) | G<br>± .004<br>(± 0.1) | H<br>± .004<br>(± 0.1) | J<br>± .008<br>(± 0.2) |
|--------------------|---------------|--------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 9                  | rigid         | Front              | .874(22.2)             | .437(11.1)             | .984(25.0)             | .492(12.5)             | .512(13.0)             | .256(6.5)              | .118(3)                | .059(1.5)              | .083(2.1)              |
|                    |               | Rear               | .807(20.5)             | .402(10.2)             | .984(25.0)             | .492(12.5)             | .449(11.4)             | .224(5.7)              | .118(3)                | .059(1.5)              | .134(3.4)              |
|                    | float         | Front              | .906(23.0)             | .453(11.5)             | .984(25.0)             | .492(12.5)             | .543(13.8)             | .272(6.9)              | .087(2.2)              | .043(1.1)              | .083(2.1)              |
|                    |               | Rear               | .839(21.3)             | .417(10.6)             | .984(25.0)             | .492(12.5)             | .441(11.2)             | .240(6.1)              | .087(2.2)              | .043(1.1)              | .134(3.4)              |
| 15                 | rigid         | Front              | 1.201(30.5)            | .602(15.3)             | 1.311(33.3)            | .657(16.7)             | .572(13.0)             | .256(6.5)              | .118(3)                | .059(1.5)              | .083(2.1)              |
|                    |               | Rear               | 1.134(28.8)            | .567(14.4)             | 1.311(33.3)            | .657(16.7)             | .449(11.4)             | .224(5.7)              | .118(3)                | .059(1.5)              | .134(3.4)              |
|                    | float         | Front              | 1.222(31.3)            | .618(15.7)             | 1.311(33.3)            | .657(16.7)             | .543(13.8)             | .272(6.9)              | .087(2.2)              | .043(1.1)              | .083(2.1)              |
|                    |               | Rear               | 1.165(29.6)            | .583(14.8)             | 1.311(33.3)            | .657(16.7)             | .480(12.2)             | .240(6.1)              | .087(2.2)              | .043(1.1)              | .134(3.4)              |
| 25                 | rigid         | Front              | 1.744(44.3)            | .870(22.1)             | 1.850(47)              | .925(23.5)             | .512(13.0)             | .256(6.5)              | .118(3)                | .059(1.5)              | .083(2.1)              |
|                    |               | Rear               | 1.673(42.5)            | .839(21.3)             | 1.850(47)              | .925(23.5)             | .449(11.4)             | .224(5.7)              | .118(3)                | .059(1.5)              | .134(3.4)              |
|                    | float         | Front              | 1.776(45.1)            | .890(22.6)             | 1.850(47)              | .925(23.5)             | .543(13.8)             | .272(6.9)              | .087(2.2)              | .043(1.1)              | .083(2.1)              |
|                    |               | Rear               | 1.705(43.3)            | .854(21.7)             | 1.850(47)              | .925(23.5)             | .480(12.2)             | .240(6.1)              | .087(2.2)              | .043(1.1)              | .134(3.4)              |
| 37                 | rigid         | Front              | 2.890(60.7)            | 1.197(30.4)            | 2.500(63.5)            | 1.248(31.7)            | .512(13.0)             | .256(6.5)              | .118(3)                | .059(1.5)              | .083(2.1)              |
|                    |               | Rear               | 2.327(59.1)            | 1.161(29.5)            | 2.500(63.5)            | 1.248(31.7)            | .449(11.4)             | .224(5.7)              | .118(3)                | .059(1.5)              | .134(3.4)              |
|                    | float         | Front              | 2.421(61.5)            | 1.213(30.8)            | 2.500(63.5)            | 1.248(31.7)            | .543(13.8)             | .272(6.9)              | .087(2.2)              | .043(1.1)              | .083(2.1)              |
|                    |               | Rear               | 2.354(59.8)            | 1.177(29.9)            | 2.500(63.5)            | 1.248(31.7)            | .480(12.2)             | .240(6.1)              | .087(2.2)              | .043(1.1)              | .134(3.4)              |
| 50                 | rigid         | Front              | 2.295(58.3)            | 1.150(29.2)            | 2.406(61.1)            | 1.205(30.6)            | .622(15.8)             | .311(7.9)              | .118(3)                | .059(1.5)              | .083(2.1)              |
|                    |               | Rear               | 2.217(56.3)            | 1.110(28.2)            | 2.406(61.1)            | 1.205(30.6)            | .555(14.1)             | .280(7.1)              | .118(3)                | .059(1.5)              | .134(3.4)              |
|                    | float         | Front              | 2.331(59.2)            | 1.165(29.6)            | 2.406(61.1)            | 1.205(30.6)            | .654(16.6)             | .327(8.3)              | .087(2.2)              | .043(1.1)              | .083(2.1)              |
|                    |               | Rear               | 2.248(57.1)            | 1.128(28.6)            | 2.406(61.1)            | 1.205(30.6)            | .587(14.9)             | .295(7.5)              | .087(2.2)              | .043(1.1)              | .134(3.4)              |

All dimensions: inches (millimeters)

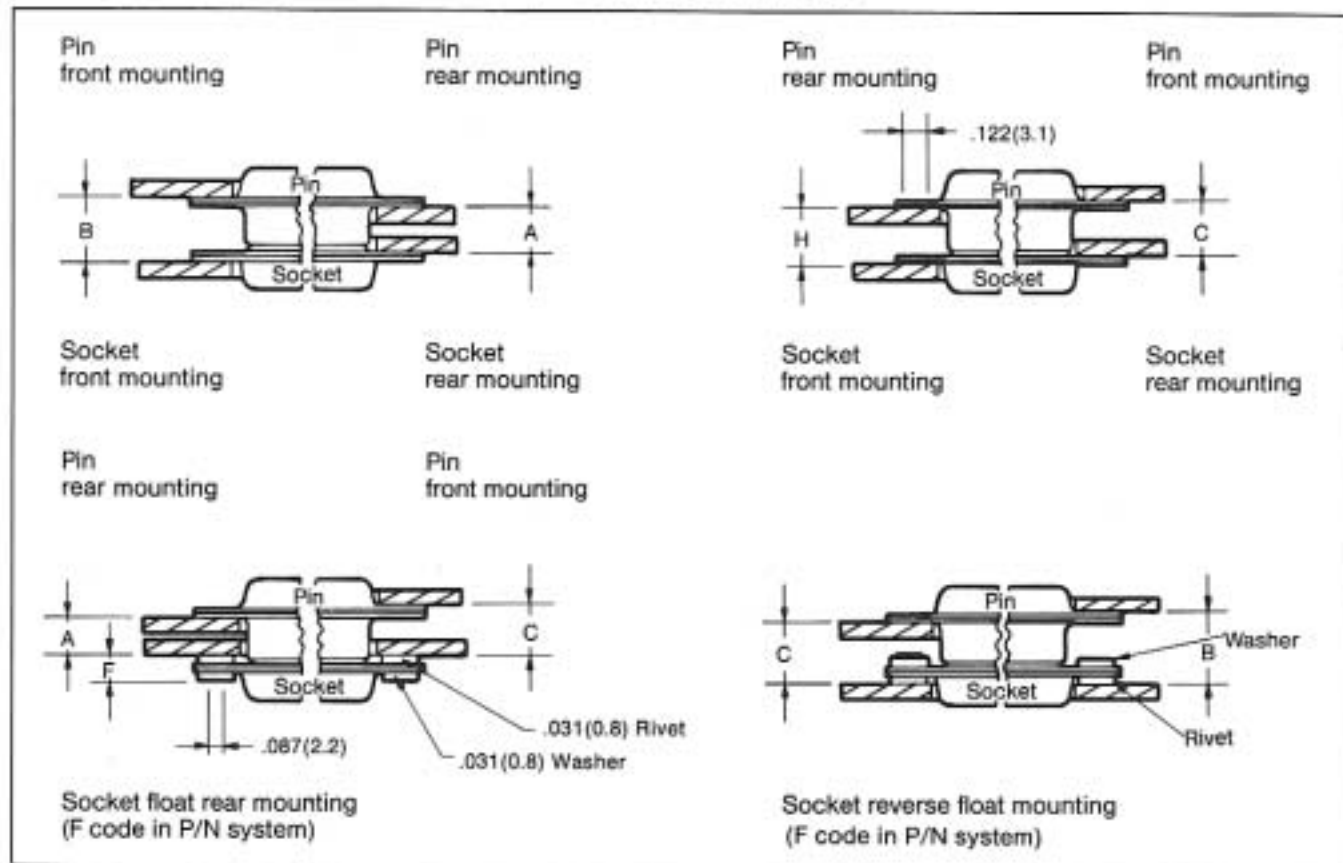
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# d-subminiature panel mounting

A, B, C and H are dimensions between panels and represent the recommended limit to be used in the design of the

connector mounting method. It is recommended that only one assembly either pin or socket, be float mounted.



Note:

Plugs have pin contacts.

Receptacles have socket contacts

## combination of mated connectors

| Size      | Pin     | Socket  | A<br>+.030<br>0<br>(+.076)<br>0 | B<br>+.030<br>0<br>(+.076)<br>0 | C<br>+.030<br>0<br>(+.076)<br>0 | F<br>0<br>-.012<br>0<br>(-.03) | H<br>+.030<br>0<br>(+.076)<br>0 |
|-----------|---------|---------|---------------------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|
| E,A,B,C,D | Rigid   | Rigid   | .250(6.35)                      | .352(8.95)                      | .301(7.65)                      | —                              | .301(7.65)                      |
| E,A,B,C,D | Rigid   | Float F | .219(5.55)                      | —                               | .270(6.85)                      | .130(3.3)                      | —                               |
| E,A,B,C,D | Float F | Rigid   | .219(5.55)                      | —                               | .270(6.85)                      | .130(3.3)                      | —                               |
| E,A,B,C,D | Rigid   | Float F | —                               | .360(9.15)                      | .321(8.15)                      | .130(3.3)                      | —                               |
| E,A,B,C,D | Float F | Rigid   | —                               | .360(9.15)                      | .321(8.15)                      | .130(3.3)                      | —                               |

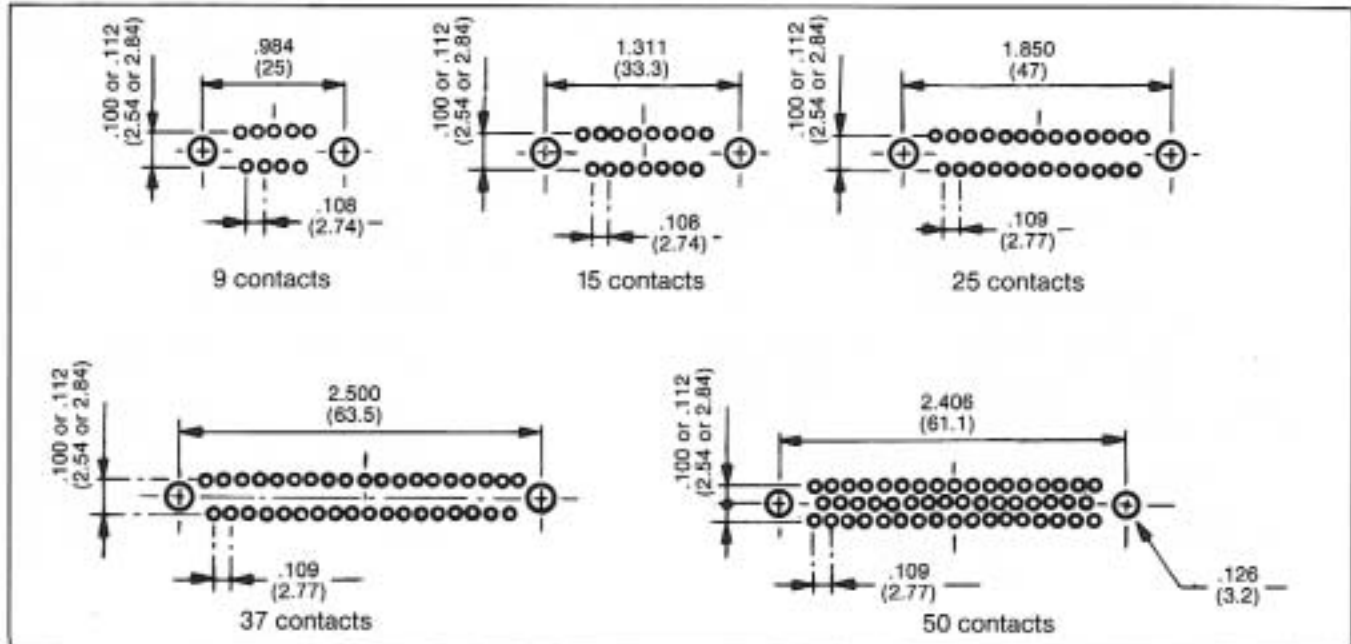
Note: Dimensions are the same if socket or plug connectors are float mounted.



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# d-subminiature contact arrangements

## printed circuit board cutouts



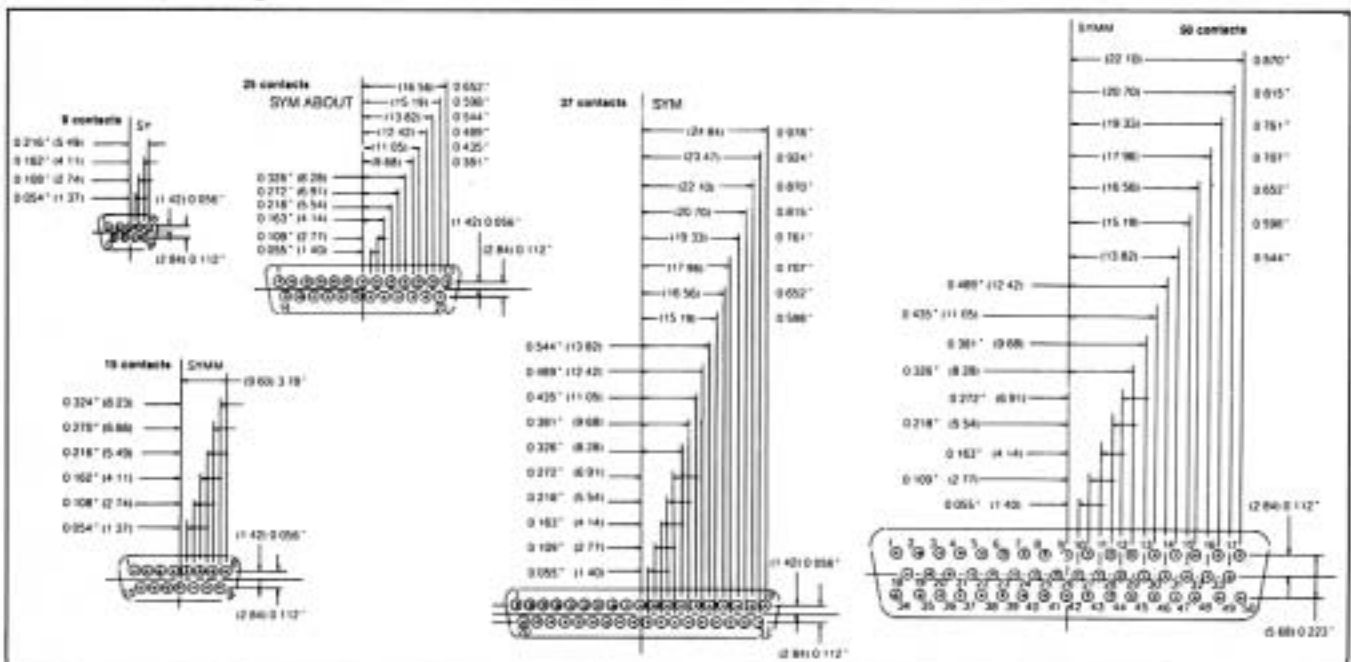
Solder pin diameter  
P/C board hole diameter

.024(0.6)  
.030(0.75) min

.030(0.76)  
.035(0.9) min

.040(1.02)  
.047(1.20) min

## contact spacing



All dimensions: inches (millimeters)

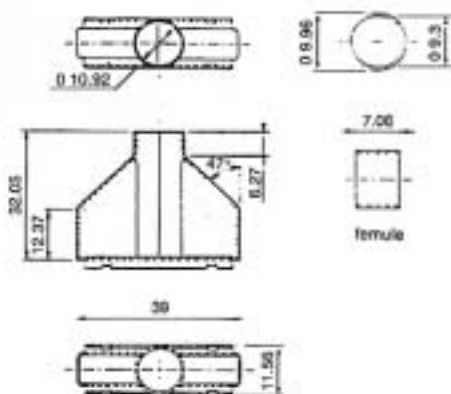
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**WPI® d-subminiature overmold can**  
**...superior EMI shielding & ESD protection**

**...for use with WPI®  
d-subminiature  
rear-release connectors  
(117 / 177 / 777 series)**

**dimensions**

**description**

This one piece design offers improved shielding characteristics over competitive designs, as well as providing lower installed cost. The WPI® overmold can be available in the popular 25 contact size, and

incorporates a single ferrule for a variety of cable diameters, eliminating the need for inner / outer crimp typical of other offerings. The over-mold can offers up to 40 dB shielding at one GHz.

## specifications

hood: tin-plated cold rolled steel  
ferrule: stainless steel

backshell: 94v0 thermoplastic.

hood and ferrule plating: bright tin/lead over nickel

### ordering information

| WPI® part number                                                                                                                                                         | contents                    | size |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------|
| 17-1826 (plug)                                                                                                                                                           | d-sub overmold can kit*     | 25   |
| 17-1827 (receptacle)                                                                                                                                                     | d-sub overmold can kit*     | 25   |
| * WPI® overmold can kit is comprised of one overmold can with basic ferrule, a rear-release connector, 25 gold flash contacts, a backshell, a grommet, and thumb screws. |                             |      |
| 17-9433-25                                                                                                                                                               | overmold can with ferrule** | 25   |
| ** must be used in conjunction with WPI® d-sub connectors                                                                                                                |                             |      |

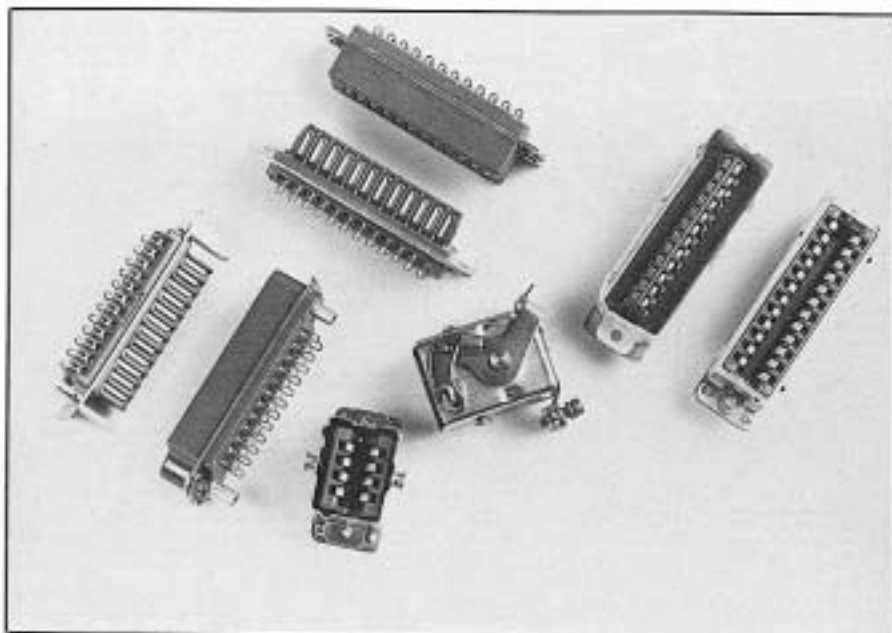
## termination tooling

See Section 16 Page 2 for overmold can termination tools.



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# 26 series® connectors



## specifications

|                       |                                                             |
|-----------------------|-------------------------------------------------------------|
| Current Capacity      | 5 amps per contact                                          |
| Voltage Rating        | 750 volts D.C. at sea level<br>300 volts D.C. at 60,000 ft. |
| Operating Temperature | -55°C to +125°C<br>-67°F to +257°F                          |
| Contact Plating       | .00003" gold over nickel                                    |
| Maximum Wire Size     | 16 gauge                                                    |

Plugs and receptacles are molded of high-impact diallyl phthalate dielectric with molded-in mounting plates of corrosion-resistant passivated stainless steel. Receptacles have float mount bushings which provide .028" radial movement for perfect alignment. Contacts are gold-plated over nickel with solder eyelet tails.

This connector provides rugged, heavy duty interconnections where larger gauge wires must be used and size is not a limiting factor.

Millions of Blue Ribbon Connectors are now used in industrial controls, mobile radios, instruments and test equipment, oscilloscopes, video tape recorders, computer control equipment, TV cameras, data displays, communications equipment, and many other applications requiring high reliability.

## features

**Contact Mating:** The 26 series® connectors mate easily, with no danger of misalignment or bent pins. Two wide, positive pressure contact points produce a self-cleaning and wiping action to keep surfaces clean and clear for low-resistance and continuity.

**Longer Life:** Estimated service life of 25 years in a mated condition for high reliability.

**Versatility:** Choose from: 3 rack and panel configurations; 2 cable-to-panel types, 8 to 42 contacts; barrier polarization, pin polarization, barrier polarization with keyed shells, with a large number of alternate positions (available on special order).

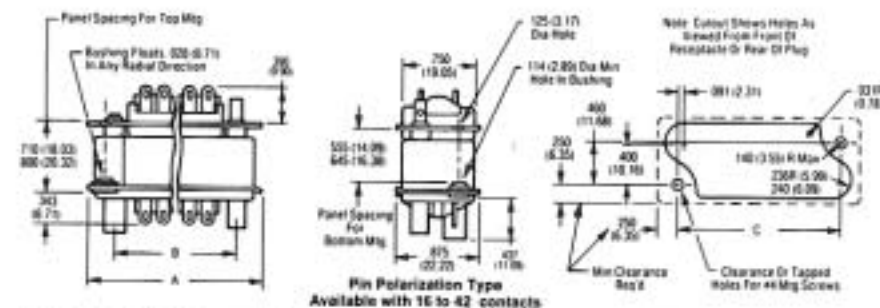
**Lower Cost:** Considering all the superior durability features of design and construction, these connectors offer you lower initial and life-cycle cost over any comparable competitive connector. Immediate off-the-shelf availability from local distributors can be a cost-saving factor also.



## 26 series® rack-and-panel connectors

**pin polarization**

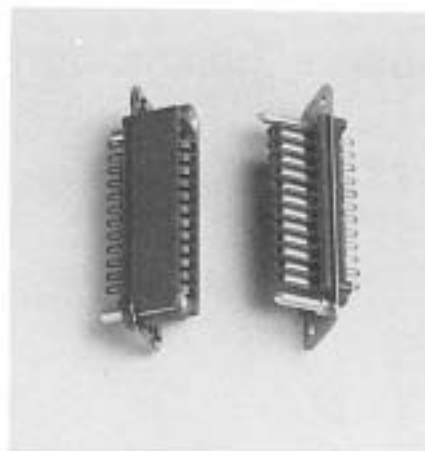
For blind mating situations...pins mate before contacts for perfect alignment.



**dimensions (plug and receptacle mated)**

|          | A     |          | B     |          | C     |          |
|----------|-------|----------|-------|----------|-------|----------|
| Contacts | in.   | mm       | in.   | mm       | in.   | mm       |
| 16       | 2.449 | (62.20)  | 1.842 | (46.78)  | 2.024 | (51.40)  |
| 24       | 3.125 | (79.37)  | 2.522 | (64.05)  | 2.704 | (68.68)  |
| 32       | 3.805 | (96.84)  | 3.202 | (81.33)  | 3.384 | (85.95)  |
| 42       | 4.648 | (118.05) | 4.052 | (102.92) | 4.234 | (107.54) |

For reference only, subject to change without notice



26-190-XX Receptacle      26-159-XX Plug

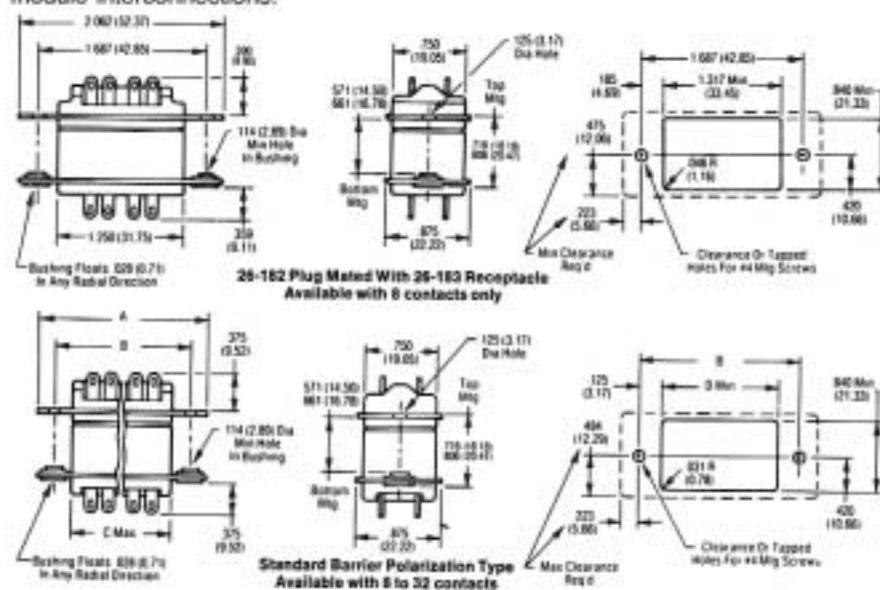
### ordering information

| contacts | plug      | receptacle |
|----------|-----------|------------|
| 16       | 26-159-16 | 26-190-16  |
| 24       | 26-159-24 | 26-190-24  |
| 32       | 26-159-32 | 26-190-32  |
| 42       | 26-159-42 | 26-190-42* |

\*\* Not normally stocked by distributors.

## barrier polarization

**Dielectric barrier** prevents mismatching....used in most rack-and-panel or module interconnections.



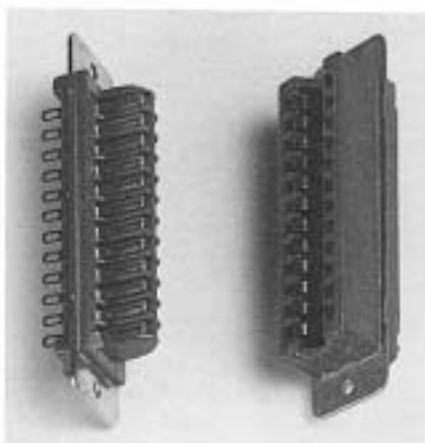
25-182 Plug Mated With 25-183 Receptacle  
Available with 8 contacts only

**Standard Barrier Polarization Type**  
Available with 8 to 32 contacts

**dimensions (plug and receptacle mated)**

| Contacts | A     |          | B     |         | C Max. |         | D Min. |         |
|----------|-------|----------|-------|---------|--------|---------|--------|---------|
|          | in.   | mm       | in.   | mm      | in.    | mm      | in.    | mm      |
| 8        | 1.726 | (43.84)  | 1.375 | (34.92) | 1.042  | (26.46) | 1.120  | (28.44) |
| 16       | 2.475 | (62.86)  | 2.125 | (53.97) | 1.790  | (45.46) | 1.868  | (47.44) |
| 24       | 3.225 | (81.91)  | 2.875 | (73.02) | 2.542  | (64.41) | 2.620  | (66.54) |
| 32       | 3.975 | (100.96) | 3.625 | (92.07) | 3.292  | (83.61) | 3.370  | (85.55) |

For reference only, subject to change without notice.



|                                  |                           |
|----------------------------------|---------------------------|
| 28-4100-XXP <sup>®</sup><br>Plug | 28-4200-XXS<br>Receptacle |
|----------------------------------|---------------------------|

### ordering information

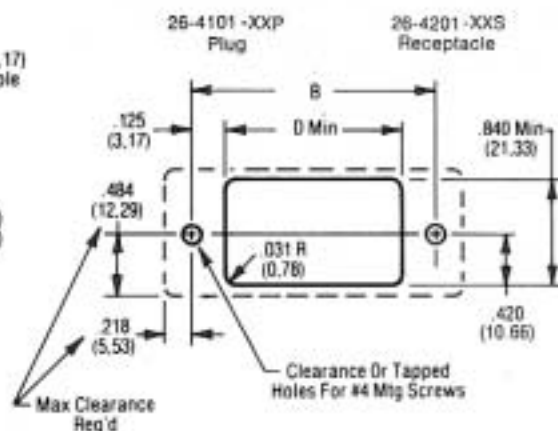
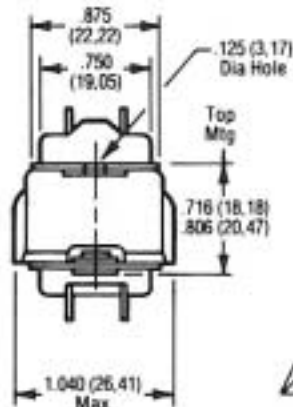
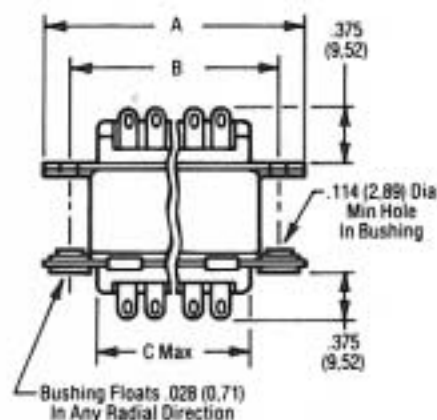
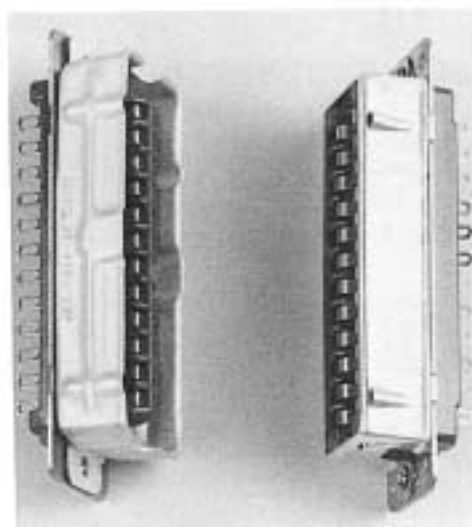
| contacts | plug        | receptacle  |
|----------|-------------|-------------|
| 8        | 26-182      | 26-183      |
| 8        | 26-4100-8P  | 26-4200-8S  |
| 16       | 26-4100-16P | 26-4200-16S |
| 24       | 26-4100-24P | 26-4200-24S |
| 32       | 26-4100-32P | 26-4200-32S |

# 26 series® rack-and-panel connectors (cont.)

## barrier polarization with keyed shells

Similar to barrier type with addition of aluminum shell on both plug and receptacle. Shell is keyed to prevent accidental mis-mating of several connectors mounted on the same panel.

26-41XX connectors have plug (male) insert in receptacle shell. 26-42XX connectors have receptacle (female) inserts in plug shell.



### dimensions (plug and receptacle mated)

| Contacts | A     |          | B     |         | C Max. |         | D Min. |         |
|----------|-------|----------|-------|---------|--------|---------|--------|---------|
|          | in.   | mm       | in.   | mm      | in.    | mm      | in.    | mm      |
| 8        | 1.726 | (43.84)  | 1.375 | (34.92) | 1.042  | (26.46) | 1.120  | (28.44) |
| 16       | 2.475 | (62.86)  | 2.125 | (53.97) | 1.790  | (45.46) | 1.868  | (47.44) |
| 24       | 3.225 | (81.91)  | 2.875 | (73.02) | 2.542  | (64.41) | 2.620  | (66.54) |
| 32       | 3.975 | (100.96) | 3.625 | (92.07) | 3.292  | (83.61) | 3.370  | (85.59) |

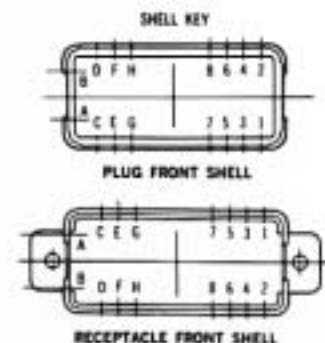
For reference only, subject to change without notice.

### Barrier Polarization Type With Keyed Shells Available with 8 to 32 contacts

#### ordering information

| CONTACTS | PLUGS       | RECEPTACLES | SHELL KEYS*<br>NUMBERS | LETTER |
|----------|-------------|-------------|------------------------|--------|
| 8        | 26-4101-8P  | 26-4201-8S  | 1                      | A      |
| 8        | 26-4102-8P  | 26-4202-8S  | 2                      | A      |
| 16       | 26-4101-16P | 26-4201-16S | 3-6                    | A-C    |
| 16       | 26-4102-16P | 26-4202-16S | 2-5                    | A-D    |
| 24       | 26-4101-24P | 26-4201-24S | 3-6                    | A-C    |
| 24       | 26-4102-24P | 26-4202-24S | 4-7                    | A-D    |
| 32       | 26-4101-32P | 26-4201-32S | 3-6                    | A-C    |
| 32       | 26-4102-32P | 26-4202-32S | 4-7                    | A-D    |

\*Consult factory for available alternate key positions.



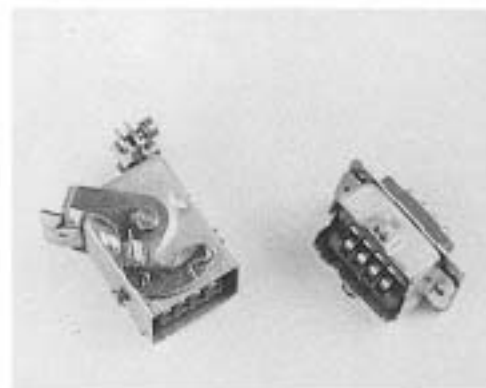
# 26 series® cable-to-panel connectors

## top cable entry

Available in cable-to-panel configurations. This type features positive latching to keep connectors securely mated despite gravity, shock, vibration or tension. Latching arm can also be wire-locked for greater safety. Shells are keyed for polarization and to prevent mismatching of multiple connectors. A wide choice of

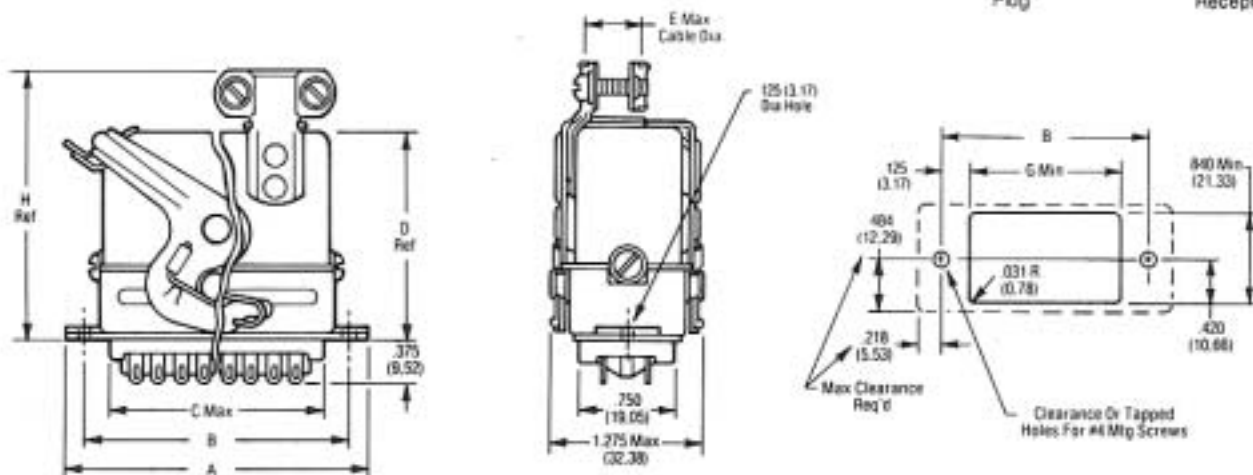
key positions is available. Shells can be provided with either plug (male) insert or receptacle (socket) insert as desired. Please specify P for plug or S for socket in part number.

This style provides cable entry at top of nickel-plated brass back shell. Cable opening has strain relief clamp with 2 screws.



26-4301-XXS or  
26-4301-XXP  
Plug

26-4401-XXP or  
26-4401-XXS  
Receptacle

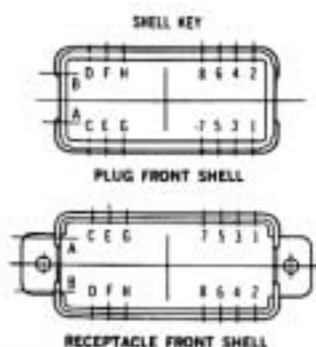


dimensions (plug and receptacle mated)

|          | A     |          | B     |         | C Max. |         | D Ref. |         | E Max. |         | G Min. |         | H Ref. |         |
|----------|-------|----------|-------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|
| Contacts | in.   | mm       | in.   | mm      | in.    | mm      | in.    | mm      | in.    | mm      | in.    | mm      | in.    | mm      |
| 8        | 1.726 | (43.84)  | 1.375 | (34.92) | 1.100  | (27.94) | 1.620  | (41.14) | 0.312  | (7.92)  | 1.120  | (28.44) | 2.065  | (52.45) |
| 16       | 2.475 | (62.86)  | 2.125 | (53.97) | 1.845  | (46.86) | 1.745  | (44.32) | 0.625  | (15.87) | 1.868  | (47.44) | 2.252  | (57.20) |
| 24       | 3.225 | (81.91)  | 2.875 | (73.02) | 2.600  | (66.04) | 1.870  | (47.49) | 0.625  | (15.87) | 2.620  | (66.54) | 2.377  | (60.37) |
| 32       | 3.975 | (100.96) | 3.625 | (92.07) | 3.350  | (85.09) | 1.933  | (49.09) | 0.625  | (15.87) | 3.370  | (85.59) | 2.440  | (61.97) |

For reference only, subject to change without notice.

### Cable-To-Panel—Top Entry Available with 8 to 32 contacts



### ordering information

| CONTACTS | PLUGS            | RECEPTACLES      | SHELL KEYS*<br>NUMBERS | LETTER |
|----------|------------------|------------------|------------------------|--------|
| 8        | 26-4301-8P or S  | 26-4401-8S or P  | 1                      | A      |
| 8        | 26-4302-8P or S  | 26-4402-8S or P  | 2                      | A      |
| 16       | 26-4301-16P or S | 26-4401-16S or P | 3-6                    | A-C    |
| 16       | 26-4302-16P or S | 26-4402-16S or P | 2-5                    | A-D    |
| 24       | 26-4301-24P or S | 26-4401-24S or P | 3-6                    | A-C    |
| 24       | 26-4302-24P or S | 26-4402-24S or P | 4-7                    | A-D    |
| 32       | 26-4301-32P or S | 26-4401-32S or P | 3-6                    | A-C    |
| 32       | 26-4302-32P or S | 26-4402-32S or P | 4-7                    | A-D    |

\*Contact factory for alternate key positions.

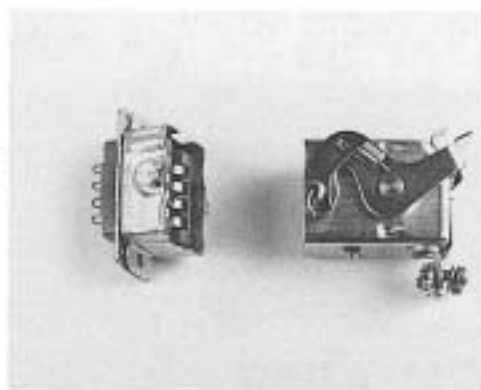
# 26 series® cable-to-panel connectors (cont.)

## side cable entry

Available in cable-to-panel configurations. This type features positive latching to keep connectors securely mated despite gravity, shock, vibration or tension. Latching arm can also be wire-locked for greater safety. Shells are keyed for polarization and to prevent mismatching of multiple connectors. A wide choice of

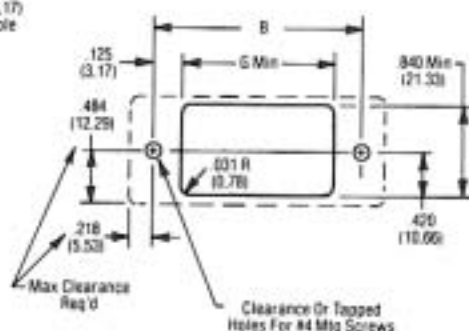
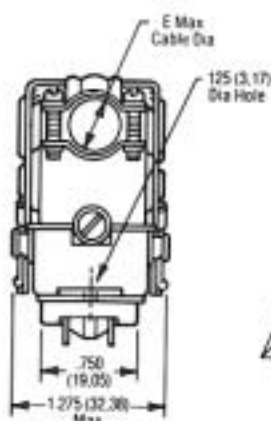
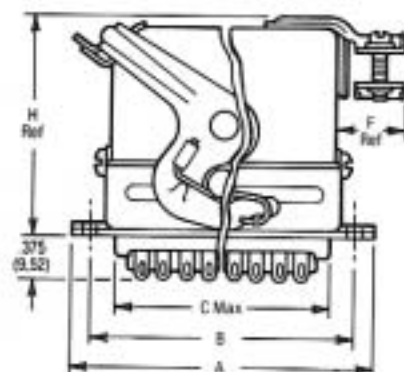
key positions is available. Shells can be provided with either plug (male) insert or receptacle (socket) insert as desired. Please specify P for plug or S for socket in part number.

This style provides cable entry at side of nickel-plated brass back shell. Cable opening has strain relief clamp with 2 screws.



26-4401-XXS  
or  
26-4401-XXP  
Receptacle

26-4501-XXP  
or  
26-4501-XXS  
Plug

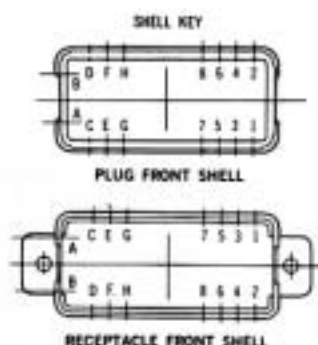


dimensions (plug and receptacle mated)

| Contacts | A     |          | B     |         | C Max. |         | E Max. |         | F Ref. |         | G Min. |         | H Ref. |         |
|----------|-------|----------|-------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|
|          | in.   | mm       | in.   | mm      | in.    | mm      | in.    | mm      | in.    | mm      | in.    | mm      | in.    | mm      |
| 8        | 1.726 | (43.84)  | 1.375 | (34.92) | 1.100  | (29.74) | 0.312  | (7.92)  | 0.438  | (11.12) | 1.120  | (28.44) | 1.703  | (43.25) |
| 16       | 2.475 | (62.86)  | 2.125 | (53.97) | 1.845  | (46.86) | 0.625  | (15.87) | 0.500  | (12.70) | 1.868  | (47.44) | 1.828  | (46.43) |
| 24       | 3.225 | (81.91)  | 2.875 | (73.02) | 2.600  | (66.04) | 0.625  | (15.87) | 0.500  | (12.70) | 2.620  | (66.54) | 1.953  | (49.60) |
| 32       | 3.975 | (100.96) | 3.625 | (92.07) | 3.350  | (85.09) | 0.625  | (15.87) | 0.500  | (12.70) | 3.370  | (85.59) | 2.031  | (51.58) |

For reference only, subject to change without notice.

### Cable-To-Panel—Side Entry Available with 8 to 32 contacts



| CONTACTS | PLUGS            | RECEPTACLES      | SHELL KEYS*<br>NUMBERS | LETTER |
|----------|------------------|------------------|------------------------|--------|
| 8        | 26-4501-8P or S  | 26-4401-8S or P  | 1                      | A      |
| 8        | 26-4502-8P or S  | 26-4402-8S or P  | 2                      | A      |
| 16       | 26-4501-16P or S | 26-4401-16S or P | 3-6                    | A-C    |
| 16       | 26-4502-16P or S | 26-4402-16S or P | 2-5                    | A-D    |
| 24       | 26-4501-24P or S | 26-4401-24S or P | 3-6                    | A-C    |
| 24       | 26-4502-24P or S | 26-4402-24S or P | 4-7                    | A-D    |
| 32       | 26-4501-32P or S | 26-4401-32S or P | 3-6                    | A-C    |
| 32       | 26-4502-32P or S | 26-4402-32S or P | 4-7                    | A-D    |

\*Contact factory for alternate key positions.

WPI - Salem Division  
23 Front Street, Salem, NJ 08079 U.S.A.  
phone (609) 935-7601  
fax (609) 935-0102 twx (510) 680-4750  
country code 1



# tube/relay sockets

## Type S With Retainer Ring Mounting

Black phenolic quick mounting sockets use no screws or rivets. Retainer ring holds socket securely in place. Sockets are notched around circumference for rotation to convenient wiring position.



78-S8  
socket and retainer ring

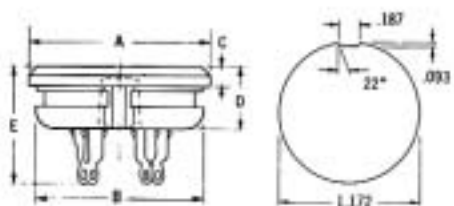
### TYPE S SOCKETS

| Contacts | Contacts | WPI Number |
|----------|----------|------------|
| 4        | Brass    | 78-S4      |
| 5        | Brass    | 78-S5      |
| 6        | Brass    | 78-S6      |
| 8 Octal  | Luballoy | 78-S8      |
| 11       | Luballoy | 78-S11     |

Contact factory for P.C. tail version.

### DIMENSIONS

| Sockets         | A     | B     | C    | D    | E             |
|-----------------|-------|-------|------|------|---------------|
| 78-S4, -S5, -S6 | 1 1/4 | 1 1/2 | .135 | .420 | 27/32 Approx. |
| 78-S8, -S11     | 1 1/4 | 1 1/2 | .145 | .490 | 1/4 Approx.   |



## Replacement Type S

Black phenolic type S sockets assembled with retainer ring holding a sturdy nickel-plated steel mounting plate. Mounting plate centers: 1 1/2" (38.1) to 1 55/64" (47.22). Other dimensions same as S type sockets shown above.



78-RS8  
socket

### REPLACEMENT TYPE S

| Contacts | WPI Number |
|----------|------------|
| 4        | 78-RS4     |
| 8 Octal  | 78-RS8     |

## Miniature Type S With Retainer Ring Mounting

Sockets are mounted without screws or rivets in 5/16" (15.88) dia. hole. Black phenolic body. Rated 3 amps @ 500 VRMS.



78-S6S  
socket and retainer ring



### MINIATURE TYPE S

| Contacts | Pin Circle Diameter | WPI Number | Mating Plugs |          |
|----------|---------------------|------------|--------------|----------|
|          |                     |            | Unshielded   | Shielded |
| 3        | .344                | 78-S3S     | 86-71-3S     | 91-MPM3S |
| 6        | .406                | 78-S6S     | 86-71-6S     | 91-MPM6S |



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country code 1

## tube/relay sockets continued

### Molded-in-plate Type

Steel mounting plate molded directly into solid phenolic body. Two holes in each contact provides easy wiring or connection of components.



77-MIP-8  
MIP socket

### MIP SOCKETS

| Contacts | WPI Number |
|----------|------------|
| 4        | 77-MIP-4   |
| 8 Octal  | 77-MIP-8   |
| 11       | 77-MIP-11  |

### Compact MIP Sockets

Octal style socket with phosphor bronze cadmium plated finish contacts. Mounts in 1 1/8" diameter hole, mounting plate holes on 1 5/16" (33,32) centers.



78-88-8  
compact MIP socket

### COMPACT MIP SOCKET

| Contacts | WPI Number |
|----------|------------|
| 8 Octal  | 78-88-8    |

### Printed Circuit MIP Socket

Mounts on PC boards up to 1/8" (3.18) thick. Current rating: 3 amps. Contacts are copper alloy (lupalloy) with cadmium plated finish. Contact tails 1/8" (3.18) long, 1/16" (1.57) wide, and .016 (.041) thick. Mount through 1/16" (1.57) diameter hole.



77-MIP6W-0125  
PCB MIP socket

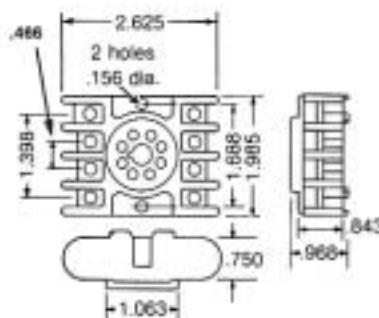
### PCB MIP SOCKET

| No. Contacts | Pin Circle Dia. | WPI Number     |
|--------------|-----------------|----------------|
| 8            | .687            | 77-MIP6W-0125  |
| 11           | .750            | 77-MIP11W-0125 |

### 8 Contact Type With Termination Screws

Phenolic body withstands 300°F continuous without melting or breakdown. Features longer termination screws with captivated pressure plates. 5 amps @ 1,250 VRMS.

- UL recognized (file #E56473)



146-103

### TERMINATION SCREW TYPE

| Description                                                            | WPI Number |
|------------------------------------------------------------------------|------------|
| 8 Contact Socket Without Tie Point Inserts — Top Mounted               | 146-103    |
| Socket with 4 Molded-in Threaded Inserts for Tie Points-Bottom Mounted | 146-204    |



# commercial plugs and accessories

## CP Type Plugs

Black phenolic plugs for use as chassis connectors, with plug-in units or as cable connectors. 4, 5, and 6 contact plugs do not have center guide post but are polarized for correct insertion by use of two pins of larger diameter than others.



86-CP-8  
plug

## CP TYPE PLUGS

| Contacts | WPI Number |
|----------|------------|
| 4        | 86-CP-4    |
| 5        | 86-CP-5    |
| 6        | 86-CP-6    |
| 8 Octal  | 86-CP-8    |
| 11       | 86-CP-11   |
| 16       | 86-CP-16   |

## Miniature Unshielded Type

Black phenolic plugs with molded-in nickel plated brass contacts used extensively for speaker connections. Rated 5 amps @ 500 VRMS. Mounts in  $\frac{5}{8}$ " (15.88) dia. hole.



86-71-3S  
plug

## UNSHIELDED TYPE

| Contacts | Pin Circle Diameter | WPI Number | Mating Sockets, Unshielded |
|----------|---------------------|------------|----------------------------|
| 3        | .343                | 86-71-3S   | 78-S3S                     |
| 6        | .406                | 86-71-6S   | 78-S6S                     |

## Light Duty Connectors

For cable to cable application, mate with each other. For cable to panel applications, mate with type S, RS and MIP tube sockets. Includes metal cap. Available with either pin contacts or socket contacts.



86-PM8-11  
plug with cable clamp cap

## CABLE CLAMP CAPS

| Contacts | Pin Contacts | Socket Contacts |
|----------|--------------|-----------------|
| 4        | 86-PM4-11    | 78-PF4-11       |
| 5        | 86-PM5-11    | 78-PF5-11       |
| 6        | 86-PM6-11    | 78-PF6-11       |
| 8        | 86-PM8-11    | 78-PF8-11       |
| 11       | 86-PM11-11   | 78-PF11-11      |



78-PF8  
socket with grommet cap

## GROMMET CAPS

| Contacts | Pin Contacts | Socket Contacts |
|----------|--------------|-----------------|
| 4        | 86-PM4       | 78-PF4          |
| 5        | 86-PM5       | 78-PF5          |
| 6        | 86-PM6       | 78-PF6          |
| 8        | 86-PM8       | 78-PF8          |
| 11       | 86-PM11      | 78-PF11         |

## Caps

Make inexpensive cable connectors of standard sockets, plugs and receptacles. For applications requiring frequent mating and unmating, use 86-3-858 with molded finger grip.



86-3-13  
end outlet



86-3-858  
strain relief



86-3-24  
cable clamp

## CAPS

| Description                                                                  | WPI Number |
|------------------------------------------------------------------------------|------------|
| End Outlet, $\frac{7}{16}$ " (11.13) I.D. insulator Black Epoxy Finish Steel | 86-3-13    |
| Cable Clamp, $\frac{1}{8}$ " (9.52) wire insulator Black Epoxy Finish Steel  | 86-3-24    |
| Strain Relief Thermoplastic End Outlet $\frac{7}{16}$ " (7.92) I.D. Black    | 86-3-858   |



WPI - Salem Division  
23 Front Street, Salem, NJ 08079 U.S.A.  
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country code 1

# microphone connectors

## 91-Q series— audio connector

WPI now introduces the 91-Q Series connectors that effectively meet the rugged challenges of contemporary, sophisticated consumer and industrial electronics in a grounded-version connector.

### versatile

91-Q Series connectors can be used in a wide range of applications:

**audio equipment**—Microphones, amplifiers, pre-amps, mixers, speakers, record players, tape decks, recorders, inter-coms, 2-way radio equipment, broadcast studio equipment, sound movie projectors, film strip projectors, video recorder systems, patch cords, etc.

**test instruments**—Analyzers, bridges, comparators, decade boxes, gauges and indicators, meters, standards, test probes, medical electronic instruments, x-ray equipment, scientific recording, measuring devices, etc.

### great performance electrical—

| No. of Contacts | Test | Voltage Rms Rating | Current Rating | Wire Size AWG |
|-----------------|------|--------------------|----------------|---------------|
| 3               | 1400 | 133                | 15A            | 12            |
| 4               | 1400 | 133                | 10A            | 16            |
| 5               | 1400 | 133                | 7.5A           | 18            |

**temperature rating**—20°F to 160°F, (–30°C to 71°C).

**dielectric withstanding voltage**—1400 V at 60Hz for one minute between any two contacts or between any contact and connector shell.

**durability**—Withstands 500 coupling cycles without any detrimental mechanical or electrical breakdowns.

**insulation resistance**—Exceeds 100 megohms.

**contact resistance**—Voltage drop is between 45-55 mV at rated current dependent upon contact and wire size.



**corrosion resistance**—Withstands standard MIL-STD-202 48-hour salt spray test without damage or corrosion.

**control systems**—Counters, detectors, alarms, transducers, servos, electric eyes, gauges, indicators, timers, regulators, etc.

**and others**—Computer peripheral equipment, educational equipment, entertainment systems, etc.

### application engineered

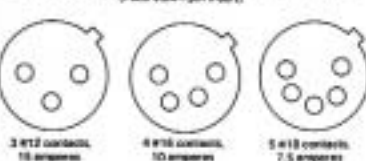
**rugged**—Solid die cast construction provides tough, high impact strength to withstand rugged use without the risk of failure from breakage.

**attractive**—Satin nickel plating enhances the appeal of even the most sophisticated equipment. . . non-reflective finish is ideally suited for studio use. Also available in lustrous black chrome.

**compact**—Reduced shell length for minimum weight and bulk for easier handling.

**fully interchangeable and interchangeable** . . . with all present industry standard latch-lock type audio connectors.

### STANDARD CONTACT ARRANGEMENT



### quick, easy assembly/disassembly—

Unique set screw cable strain relief feature effectively grips wide range of cable diameters. Utilized inserts all combine to provide greater savings in connector assembly and termination.

### quality construction

**shells and latchlock**—Durable zinc die-cast with protective satin nickel plate.

**insert dielectric**—High strength reinforced thermoplastic.

**contacts**—Copper alloy with silver plating. Pins and sockets with solder cup termination are fixed in position for quick termination.

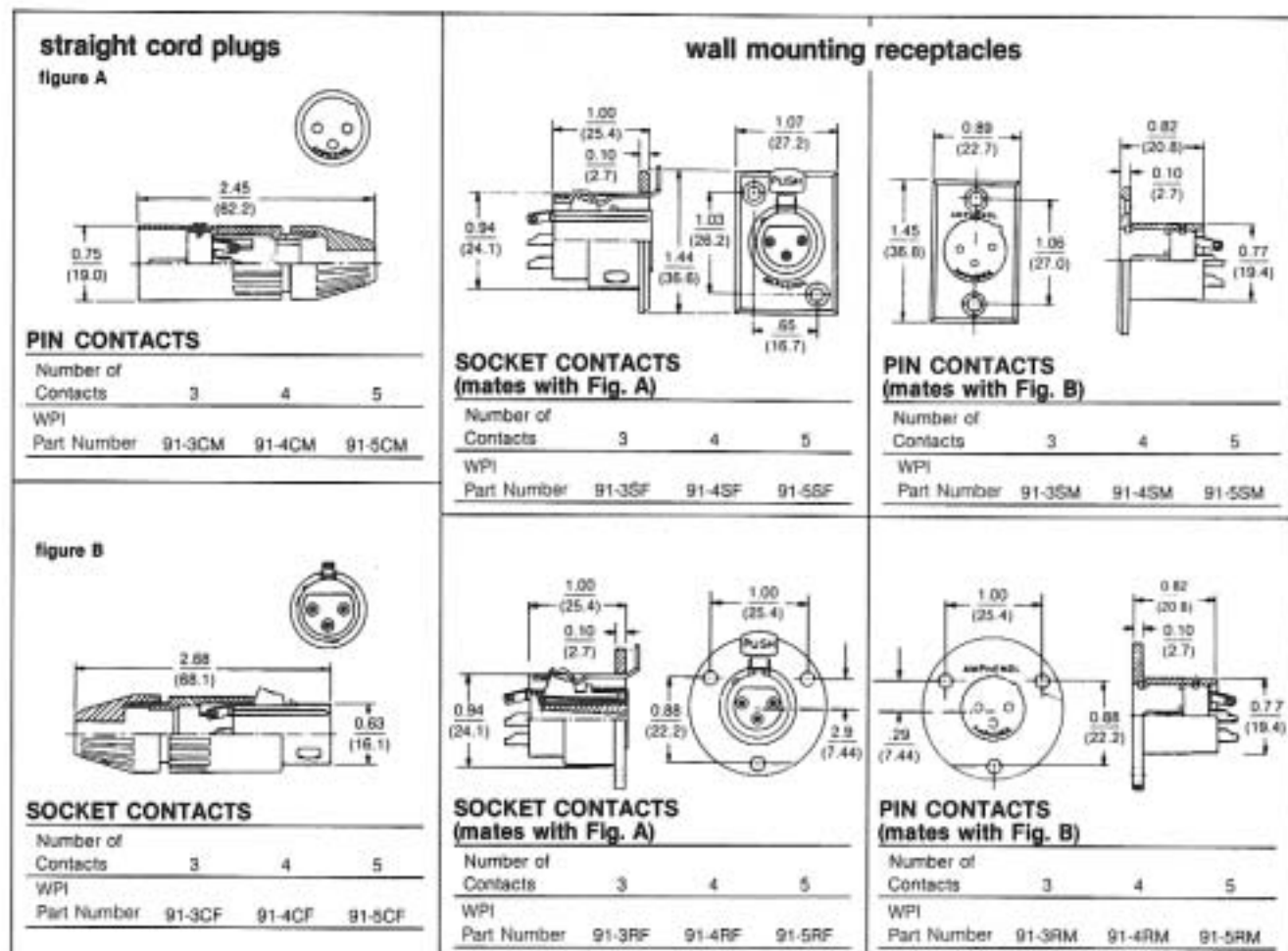
**cable clamp**—Internal set screw cable clamp and Noryl® nut accept commonly used  $\frac{3}{16}$ " to  $\frac{1}{4}$ " diameter cables.

Noryl® is a registered trademark of General Electric Co.

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## 91-Q series— audio connector



### FULLY INTERCHANGEABLE WITH ALL LATCHLOCK AUDIO CONNECTORS

Select the right WPI connector from this cross reference guide.

All connectors shown are considered electrically equivalent and mechanically interchangeable.

| WPI<br>Part Number | Replaces Old<br>Amphenol Number | Switchcraft | Cannon    | Number of<br>Contacts | Description<br>Connector Type |
|--------------------|---------------------------------|-------------|-----------|-----------------------|-------------------------------|
| 91-3CF             | 91-454,91-854                   | A3F         | XLR-3-11C | 3 female              | Cable Plug                    |
| 91-3CM             | 91-453,91-853                   | A3M         | XLR-3-12C | 3 male                | Cable Plug                    |
| 91-3SF             | 91-456                          | D3F         | XLR-3-31  | 3 female              | Square Flange Receptacle      |
| 91-3SM             | 91-455                          | D3M         | XLR-3-32  | 3 male                | Square Flange Receptacle      |
| 91-3RF             | 91-856                          | C3F         | XLR-3-13  | 3 female              | Round Flange Receptacle       |
| 91-3RM             | 91-855                          | C3M         | XLR-3-14  | 3 male                | Round Flange Receptacle       |
| 91-4CF             | 91-458,91-858                   | A4F         | XLR-4-11C | 4 female              | Cable Plug                    |
| 91-4CM             | 91-457,91-857                   | A4M         | XLR-4-12C | 4 male                | Cable Plug                    |
| 91-4SF             | 91-460                          | D4F         | XLR-4-31  | 4 female              | Square Flange Receptacle      |
| 91-4SM             | 91-459                          | D4M         | XLR-4-32  | 4 male                | Square Flange Receptacle      |
| 91-4RF             | 91-860                          | C4F         | XLR-4-13  | 4 female              | Round Flange Receptacle       |
| 91-4RM             | 91-859                          | C4M         | XLR-4-14  | 4 male                | Round Flange Receptacle       |
| 91-5CF             | 91-462                          | A5F         | XLR-5-11C | 5 female              | Cable Plug                    |
| 91-5CM             | 91-461                          | A5M         | XLR-5-12C | 5 male                | Cable Plug                    |
| 91-5SF             | 91-464                          | D5F         | XLR-5-31  | 5 female              | Square Flange Receptacle      |
| 91-5SM             | 91-463                          | D5M         | XLR-5-32  | 5 male                | Square Flange Receptacle      |
| 91-5RF             | —                               | C5F         | XLR-5-13  | 5 female              | Round Flange Receptacle       |
| 91-5RM             | —                               | C5M         | XLR-5-14  | 5 male                | Round Flange Receptacle       |

**NOTE:** For black chrome finish add (436) to end of part number when ordering.



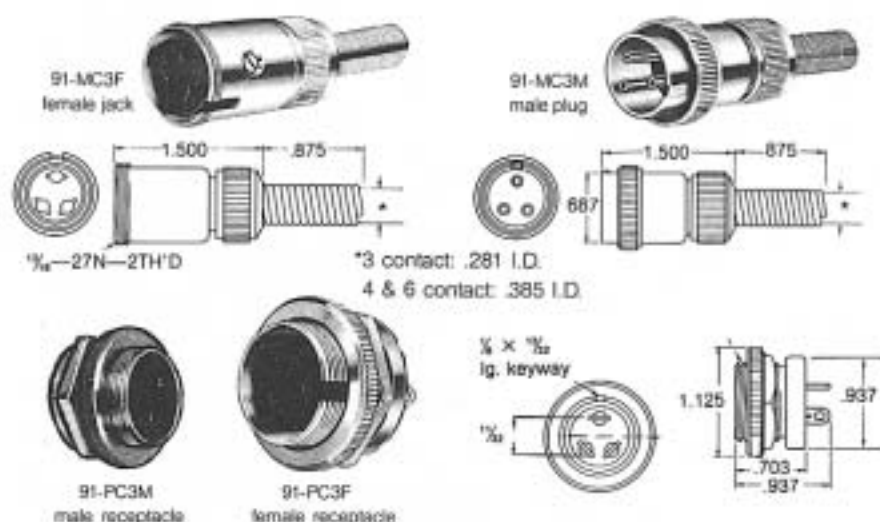
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fax (609) 935-0102 twx (510) 680-4750  
country code 1

# microphone connectors

## 3, 4 or 6 Contacts

The connectors are designed primarily for audio equipment but are used extensively on all types of portable equipment.

Connectors feature positive screw-type coupling ring connection and squeeze type clamp cable grips.



## SPECIFICATIONS

|                                                     |                                                                  |
|-----------------------------------------------------|------------------------------------------------------------------|
| Shells                                              | Chrome plated brass                                              |
| Dielectric                                          | molded black phenolic                                            |
| Voltage rating                                      | 600 V (RMS)                                                      |
| Current rating                                      | female contacts - 3 amps<br>male contacts - 5 amps               |
| Voltage breakdown (RMS) between terminal and ground | 2000 V                                                           |
| Cord protector spring                               | 3 contact - .281" (.714) I.D.<br>4-6 contact - .385" (.978) I.D. |
| Receptacle mounting hole                            | 7/32" (.2144) up to 1/4" (.3125) thick                           |

## THREADED COUPLING - 3, 4, or 6 CONTACTS

| No. Contacts | Description                 | WPI Number | Mates With WPI Number |
|--------------|-----------------------------|------------|-----------------------|
| 3            | Female Cable Jack           | 91-MC3F    | 91-MC3M               |
| 3            | Female Cable Plug           | 91-MC3F1   | 91-MC3M1, 91-PC3M     |
| 3            | Male Cable Plug             | 91-MC3M    | 91-MC3F, 91-PC3F      |
| 3            | Male Cable Jack             | 91-MC3M1   | 91-MC3F1              |
| 3            | Female Panel Receptacle     | 91-PC3F    | 91-MC3M               |
| 3            | Male Panel Receptacle       | 91-PC3M    | 91-MC3F1              |
| 4            | Female Cable Jack           | 91-MC4F    | 91-MC4M               |
| 4            | Female Cable Plug           | 91-MC4F1   | 91-MC4M1, 91-PC4M     |
| 4            | Male Cable Plug             | 91-MC4M    | 91-MC4F, 91-PC4F      |
| 4            | Contact #1 in Line with Key | 91-MC4M-12 | —                     |
| 4            | Male Cable Jack             | 91-MC4M1   | 91-MC4F1              |
| 4            | Female Panel Receptacle     | 91-PC4F    | 91-MC4M               |
| 4            | Contact #1 in Line with Key | 91-PC4F-12 | —                     |
| 4            | Male Panel Receptacle       | 91-PC4M    | 91-MC4F1              |
| 6            | Female Cable Jack           | 91-MC6F    | 91-MC6M               |
| 6            | Female Cable Plug           | 91-MC6F1   | 91-PC6M               |
| 6            | Male Cable Plug             | 91-MC6M    | 91-MC6F, 91-PC6F      |
| 6            | Female Panel Receptacle     | 91-PC6F    | 91-MC6M               |
| 6            | Male Panel Receptacle       | 91-PC6M    | 91-MC6F1              |
| —            | Cap & Chain for Receptacle  | 91-CCC3    | —                     |
| —            | Female Insert               | 91-3F      | —                     |
| —            | Male Insert                 | 91-3M      | —                     |

## Single Contact

Standard type. Chrome plated machined brass with threaded coupling. Receptacles mount in .385" (.978) holes when grounded; .500" (12.70) holes for ungrounded two circuit operation. Spring cord protection for 1/4" (6.35) cable.



## SINGLE CONTACT

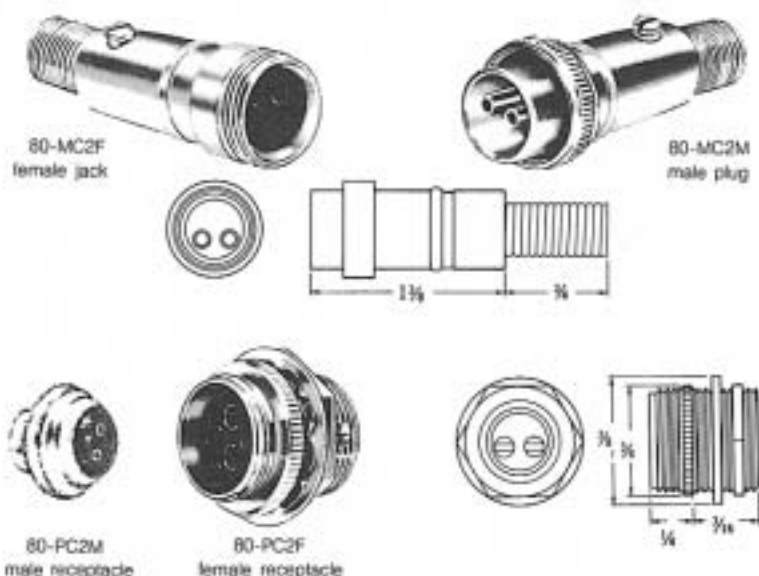
| Description   | WPI Number |
|---------------|------------|
| Straight Plug | 80-75-MC1F |
| Cable Jack    | 80-75-MC1M |
| Cap & Chain   | 80-75-CCC1 |



## microphone connectors continued

### Single and Double Contact

Chrome plated machined brass shells with threaded coupling and black phenolic dielectric. For shielded cables, single and two conductor cables, etc. Mounting hole  $\frac{5}{16}$ " (15.88). Maximum chassis thickness for lock nut type receptacle:  $1\frac{1}{32}$ " (8.74). Cable dia: up to  $\frac{5}{16}$ " (7.92).



### SPECIFICATIONS

|                                                |                                                                                                    |
|------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Voltage/current rating - single contact:       | Male - 1250 V, 5 amps<br>Female - 1000 V, 3 amps                                                   |
| Double contact:                                | Male - 600 V, 3 amps<br>Female - 600 V, 3 amps                                                     |
| Voltage breakdown between terminals and ground | Single contact male - 4000 V<br>Female - 3000 V<br>Double contact male - 2000 V<br>Female - 2000 V |

### THREADED COUPLING - 1 or 2 CONTACTS

| Contacts | Description                | WPI Number | Mates With          |
|----------|----------------------------|------------|---------------------|
| 1        | Male Cable Plug            | 80-M       | 80-C                |
| 1        | Female Panel Receptacle    | 80-C       | 80-M                |
| 2        | Male Cable Plug            | 80-MC2M    | 80-MC2F or 80-PC2F  |
| 2        | Female Cable Plug          | 80-MC2F1   | 80-PC2M or 80-MC2M1 |
| 2        | Female Cable Jack          | 80-MC2F    | 80-MC2M             |
| 2        | Male Cable Jack            | 80-MC2M1   | 80-MC2F1            |
| 2        | Female Panel Receptacle    | 80-PC2F    | 80-MC2M             |
| 2        | Male Panel Receptacle      | 80-PC2M    | 80-MC2F1            |
| -        | Female Insert              | 80-2F      | -                   |
| -        | Male Insert                | 80-2M      | -                   |
| -        | Cap & Chain for Receptacle | 80-75-CCC1 | -                   |

### Miniature Connectors

Compact connectors for shielded or unshielded cables. Can be used for battery antenna or microphone applications

### SPECIFICATIONS

|                |                              |
|----------------|------------------------------|
| Shells         | Cadmium plated brass         |
| Dielectric     | Black phenolic               |
| Cable diameter | up to $\frac{1}{4}$ " (6.35) |
| Voltage rating | 500 V, 3 amps                |



### CABLE SOCKETS

| No. Contacts | Sockets $\frac{13}{16}$ " Long Shell | Mating Plugs $\frac{13}{16}$ " Long Shell |
|--------------|--------------------------------------|-------------------------------------------|
| 3            | 91-MPF3S                             | 91-MPM3S                                  |
| 4            | 91-MPF4S                             | 91-MPM4S                                  |
| 5            | 91-MPF5S                             | 91-MPM5S                                  |
| 6            | 91-MPF6S                             | 91-MPM6S                                  |

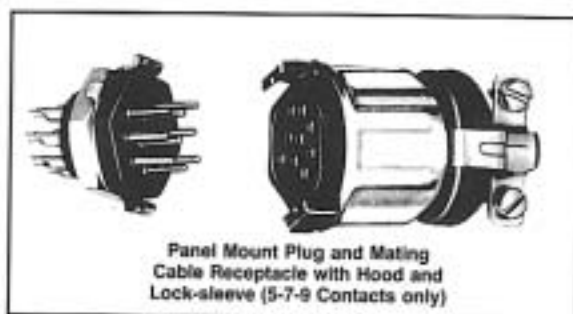
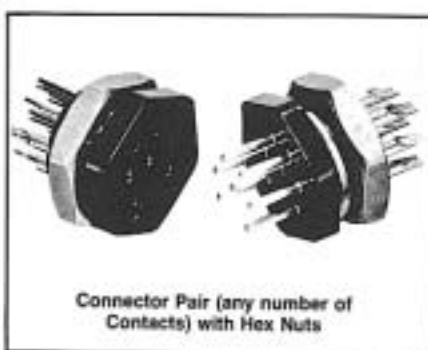
### CABLE PLUGS

| No. Contacts | Plugs $\frac{13}{16}$ " Long Shell | Mating Socket                        |                    |
|--------------|------------------------------------|--------------------------------------|--------------------|
|              |                                    | Cable Socket $\frac{13}{16}$ " Shell | Chassis Unshielded |
| 3            | 91-MPM3S                           | 91-MPF3S                             | 78-S3S             |
| 4            | 91-MPM4S                           | 91-MPF4S                             | -                  |
| 5            | 91-MPM5S                           | 91-MPF5S                             | -                  |
| 6            | 91-MPM6S                           | 91-MPF6S                             | 78-S6S             |



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# 126 series miniature hexagonal connectors



WPI miniature hexagonal connectors are available in four contact configurations with a variety of accessories to meet a wide range of applications.

The connectors can be used for rack and panel, cable to cable, and cable to panel connections.

Locking clips are available to prevent unmating caused by vibration or shock.

## Dimensions

**Overall Diameter** –  $\frac{3}{4}$ "

**Mated** –  $1\frac{1}{8}$ " (extended length to the back of the cable clamp)

## Specifications

**Dielectric** — thermoplastic

**Contact size** — #20 (except one #16 on 4 contact insert)

**Wire size** — #20 or smaller

**Temperature range** — -60°C to +125°C (-76°F to +257°F)

**Current rating** — 7.5 amps

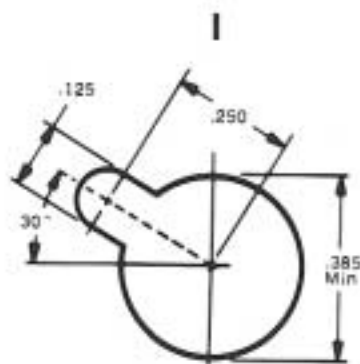
**Voltage rating** — 500 VAC (RMS) at Sea Level

**Hardware** — cold rolled steel, nickel plated

**Contacts** — copper alloy, gold over nickel plate

**Panel thickness** —  $\frac{3}{32}$ " (max)

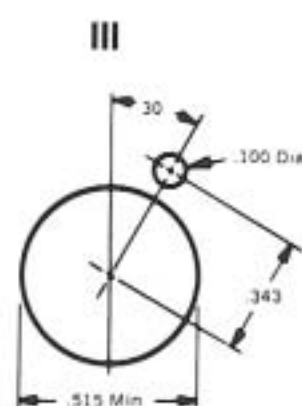
## Mounting Holes



Four-Contact  
126-214, 126-214-1001,  
126-233, 126-215-1002 only



5-7-9 Contact  
Hex Nut Type Without  
Panel Locking Clip



5-7-9 Contact  
Hex Nut Type With  
Panel Locking Clip

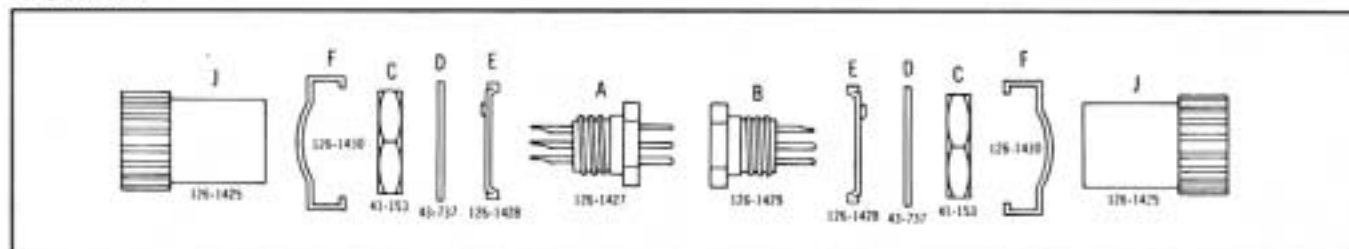
Design specifications subject to change. Consult WPI for the latest specifications.

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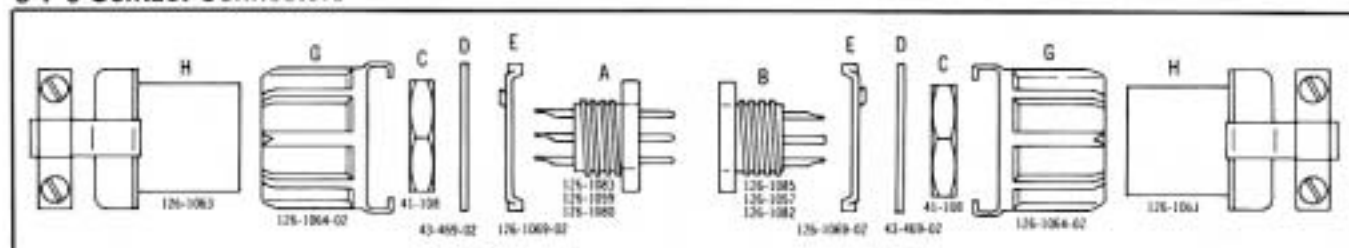


# 126 series connector assemblies

## 4-Contact



## 5-7-9 Contact Connectors



## order information

These connectors can be ordered in any combination to suit your needs. Please refer to the exploded view drawing above to determine the components you require. Note the identification letter. Then order by the WPI part

number indicated along side the desired combination of components and the required number of contacts. For example, a male 5 contact connector with rear hood & cable clamp and lock sleeve requires components A, G and H. In the column for male 5 contact

assemblies, AGH indicates part number 126-217. If you order part #126-217, you will automatically receive all three components. They may also be ordered individually, if you prefer. Simply refer to the individual component part numbers shown below.

## connector assemblies

### 4-Contact

| Key  | MALE Part No.  | Mtg. | Key  | FEMALE Part No. | Mtg. |
|------|----------------|------|------|-----------------|------|
| A    | 126-1427       | —    | B    | 126-1429        | —    |
| AC   | 126-1431 *     | —    | BC   | 126-3815 *      | —    |
| ACD  | 126-1432 *     | —    | BCD  | 126-3816 *      | —    |
| AFJ  | 126-214-1000   | —    | BFJ  | 126-215         | —    |
| ACE  | 126-214        | I    | BCE  | 126-233         | I    |
| ACDE | 126-214-1001 * | I    | BCDE | 126-215-1002 *  | I    |
| AEJ  | 126-214-1002 * | —    | BEJ  | 126-215-1001 *  | —    |

Backshells do not have cable clamps.

### 5-Contact

| Key  | MALE Part No.  | Mtg. | Key  | FEMALE Part No. | Mtg. |
|------|----------------|------|------|-----------------|------|
| A    | 126-1083       | —    | B    | 126-1085        | —    |
| AC   | 126-010        | II   | BC   | 126-011         | II   |
| ACD  | 126-010-1000 * | II   | BCD  | 126-011-1000 *  | II   |
| AGH  | 126-217        | —    | BGH  | 126-223         | —    |
| ACE  | 126-216        | III  | BCE  | 126-218         | III  |
| ACDE | 126-216-1000 * | III  | BCDE | 126-218-1000 *  | III  |
| AEH  | 126-217-1000 * | —    | BEH  | 126-223-1000 *  | —    |

\*Non-stocking item — Consult factory for delivery.



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# 126 series connector assemblies (cont.) parts

## 4-Contact Connector

| Description            | Part No. | Item Key |
|------------------------|----------|----------|
| Basic Male Connector   | 126-1427 | A        |
| Basic Female Connector | 126-1429 | B        |
| Hex Nut                | 41-153   | C        |
| Lockwasher             | 43-737   | D        |
| Clip #1                | 126-1428 | E        |
| Clip #2                | 126-1430 | F        |
| Hood                   | 126-1425 | J        |

## 7-Contact

| Key  | MALE Part No.  | Mtg. | Key  | FEMALE Part No. | Mtg. |
|------|----------------|------|------|-----------------|------|
| A    | 126-1059       | —    | B    | 126-1057        | —    |
| AC   | 126-191        | II   | BC   | 126-192         | II   |
| ACD  | 126-191-1000 * | II   | BCD  | 126-192-1001 *  | II   |
| AGH  | 126-195        | —    | BGH  | 126-196         | —    |
| ACE  | 126-197        | III  | BCE  | 126-198         | III  |
| ACDE | 126-197-1000 * | III  | BCDE | 126-198-1003 *  | III  |
| AEH  | 126-195-1002 * | —    | BEH  | 126-196-1000 *  | —    |

## 9-Contact

| Key  | MALE Part No.  | Mtg. | Key  | FEMALE Part No. | Mtg. |
|------|----------------|------|------|-----------------|------|
| A    | 126-1080       | —    | B    | 126-1082        | —    |
| AC   | 126-012        | II   | BC   | 126-013         | II   |
| ACD  | 126-012-1000 * | II   | BCD  | 126-013-1000 *  | II   |
| AGH  | 126-220        | —    | BGH  | 126-222         | —    |
| ACE  | 126-219        | III  | BCE  | 126-221         | III  |
| ACDE | 126-219-1000 * | III  | BCDE | 126-221-1000 *  | III  |
| AEH  | 126-220-1000 * | —    | BEH  | 126-221-1001 *  | —    |

## 5-7-9-Contact Connectors

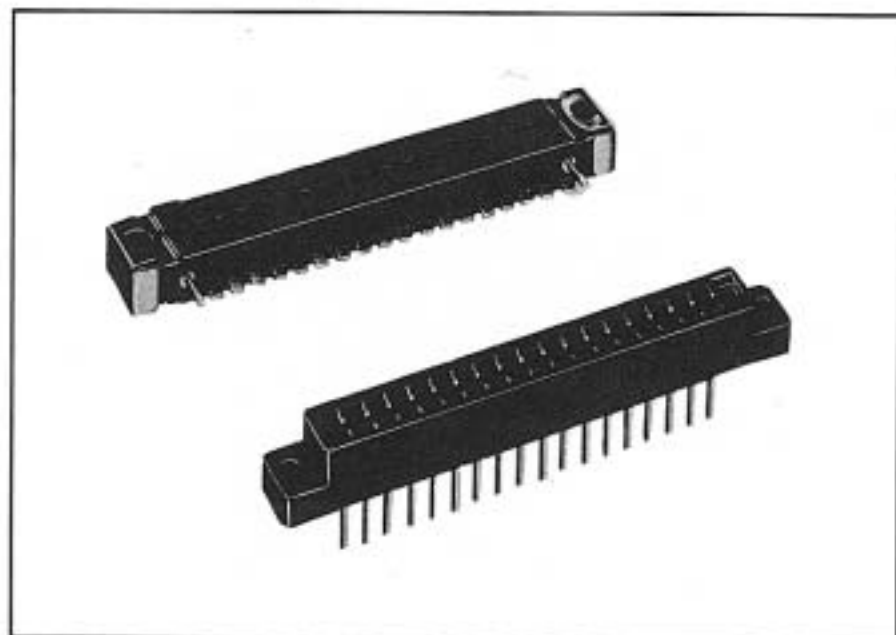
| Description                      | Part No.    | Item Key |
|----------------------------------|-------------|----------|
| 5-contact Basic Male Connector   | 126-1083    | A        |
| 5-contact Basic Female Connector | 126-1085    | B        |
| 7-contact Basic Male Connector   | 126-1059    | A        |
| 7-contact Basic Female Connector | 126-1057    | B        |
| 9-contact Basic Male Connector   | 126-1080    | A        |
| 9-contact Basic Female Connector | 126-1082    | B        |
| Hex Nut                          | 41-108      | C        |
| Lock washer                      | 43-469-02   | D        |
| Clip                             | 126-1069-02 | E        |
| Locksleeve                       | 126-1064-02 | G        |
| Hood & Cable Clamp               | 126-1063    | H        |

\*Non-stocking item — Consult factory for delivery.

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# 133/143 series commercial and industrial printed circuit connectors



## specifications

**operating voltage:** 600 VAC (RMS) at sea level

**current rating:** 5 amps

**dielectric material:** industrial type blue-mineral-filled diallyl phthalate per MIL-M-14 Type MDG.

**dielectric resistance:** 5000 megohms min.

**contact material:** 133 series-brass, 143 series-phosphor bronze and copper alloy.

**contact plating:** standard .000020 (0.000508) min. gold over nickel

**contact resistance:** 25 millivolts at rated current

**board thickness:** 133 series - male plug adapters for pc boards, especially useful in situations involving other than normal 1/16 (1,57) thick boards 143 series - .054 (1,37 to .070 (1,78) pc board or 133 series plugs

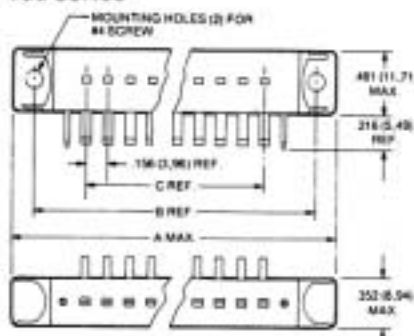
**guide pin material:** zinc plated brass

**end cap material:** stainless steel (passivated)

## 133 series dimensions

| No. of Contact Positions | A Max.         | B Ref.         | C Ref.        |
|--------------------------|----------------|----------------|---------------|
| 6                        | 1.852 (47.04)  | 1.531 (38.89)  | 0.781 (19.84) |
| 10                       | 2.477 (62.92)  | 2.156 (54.76)  | 1.406 (35.91) |
| 12                       | 2.790 (70.87)  | 2.468 (62.69)  | 1.718 (43.64) |
| 15                       | 3.257 (82.73)  | 2.937 (74.60)  | 2.187 (55.55) |
| 18                       | 3.727 (94.67)  | 3.406 (86.51)  | 2.656 (67.46) |
| 22                       | 4.362 (110.54) | 4.031 (102.39) | 3.281 (83.38) |

## 133 series



ALL DIMENSIONS REFERENCE ONLY



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# 133/143 series commercial and industrial printed circuit connectors (cont.)

.156" (3.96) contact centers

## order information

To order the 133/143 series connector required, put the part number together as per the following example:

1 3 3 - 0 1 5 - 2 1 - ( 1 0 1 )

| SERIES NUMBER |            |
|---------------|------------|
| 133           | Plug       |
| 143           | Receptacle |

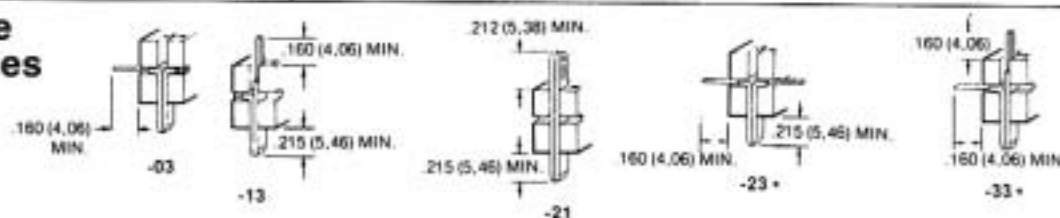
| NUMBER OF CONTACT POSITIONS |                 |
|-----------------------------|-----------------|
| Digit Group                 | No. of Contacts |
| 006-                        | 6               |
| 010-                        | 10              |
| 012-                        | 12              |
| 015-                        | 15              |
| 018-                        | 18              |
| 022-                        | 22              |
| 028-                        | 28              |
| 036-                        | 36              |

The 28 and 36 position connectors are available only in the 143 Series.

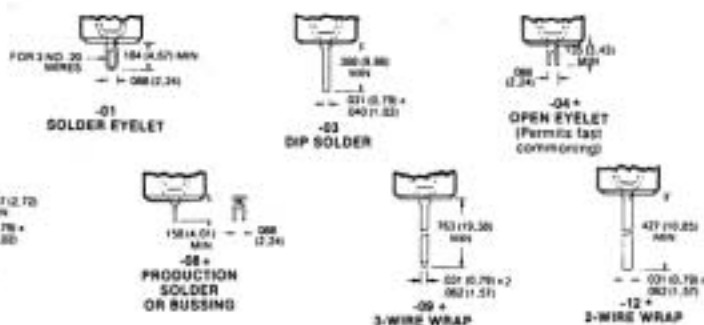
| USER INFORMATION                        |         |         |
|-----------------------------------------|---------|---------|
| POLARIZING KEY LOCATION (on 143 Series) |         |         |
| A 1001-                                 | P 1013- | c 1025- |
| B 1002-                                 | R 1014- | d 1026- |
| C 1003-                                 | S 1015- | e 1027- |
| D 1004-                                 | T 1016- | f 1028- |
| E 1005-                                 | U 1017- | g 1029- |
| F 1006-                                 | V 1018- | h 1030- |
| H 1007-                                 | W 1019- | j 1031- |
| J 1008-                                 | X 1020- | k 1032- |
| K 1009-                                 | Y 1021- | m 1033- |
| L 1010-                                 | Z 1022- | n 1034- |
| M 1011-                                 | a 1023- | p 1035- |
| N 1012-                                 | b 1024- | r 1036- |

| COMMON DEVIATIONS |                                                       |
|-------------------|-------------------------------------------------------|
| (101)             | .0001 (0.00254) min. gold-over nickel contact plating |
| (102)             | .00003 (0.00086) gold-over-nickel contact plating     |
| (107)             | (for receptacle) stainless-steel float bushings       |
| • (110)           | (for receptacle) card guide, 15, 18 & 22 size only    |

## tail style 133 series



## 143 series



## polarization



143-953  
Over-the-Contact  
Metal Key



143-754  
Between the Contact  
Plastic Key  
(available for 15, 18, 22 or 28 sizes.)

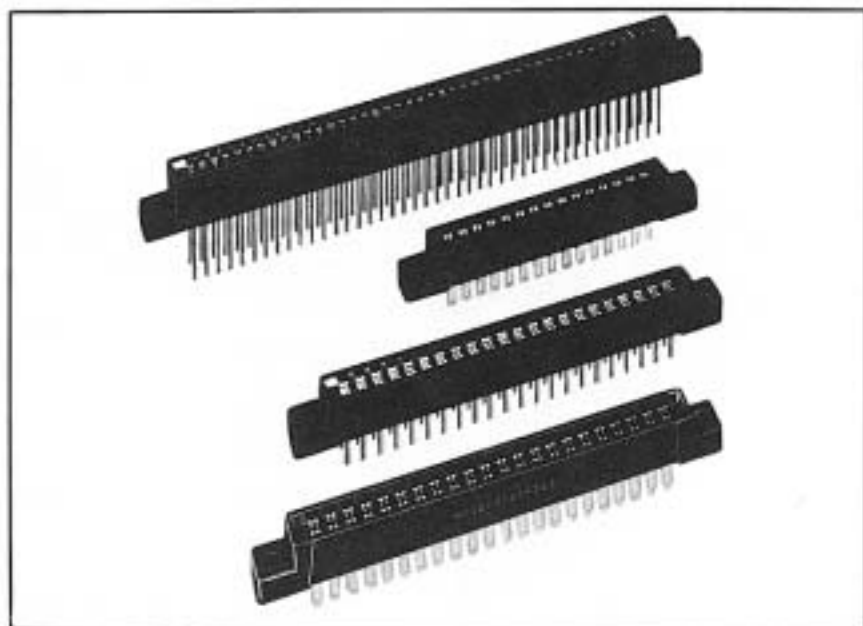
\*Non-stocking item — Consult factory for delivery.

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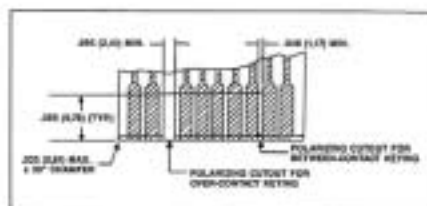




# 225 series printed circuit connectors



## recommended 225 series P.C. board cutouts



## specifications

### commercial connectors

#### operating voltage:

600 VAC (RMS) at sea level  
150 VAC (RMS) at 70,000 feet

#### current rating:

5 amps

#### dielectric material:

**wire wrappable type** – electrical  
grade phenolic, black

**solder type** – glass filled  
phenolic, black

#### insulation resistance:

5,000 megohms minimum

#### contact material:

**wire wrappable type** – phosphor  
bronze plated .000020 (0.000508)  
min. gold over nickel

**solder type** – copper alloy .000020  
(0.000508) min. gold over nickel

#### contact resistance:

30 millivolts maximum at rated current

#### board thickness:

.054 (1.37) to .071 (1.80)

- UL recognized (file #E115487)

### industrial connectors

#### operating voltage:

600 VAC (RMS) at sea level  
150 VAC (RMS) at 70,000 feet

#### current rating:

5 amps

#### dielectric material:

**solder type** – glass-fiber-reinforced  
diallyl phthalate type SDG-F per  
MIL-M-14

#### insulation resistance:

5,000 megohms minimum

#### contact material:

**solder-type** – all beryllium copper  
except phosphor bronze for bridged  
contact with one tail

#### contact resistance:

30 millivolts maximum at rated current

#### board thickness:

.054 (1.37) to .071 (1.80)

### military connectors qualified to MIL-C-21097 E/21

#### operating voltage:

600 VAC (RMS) at sea level  
150 VAC (RMS) at 70,000 feet

#### current rating:

5 amps continuous

#### dielectric material:

glass-fiber-reinforced diallyl phthalate  
type SDG-F per MIL-M-14

#### insulation resistance:

5,000 megohms minimum

#### contact material:

all beryllium copper except phosphor  
bronze for bridged contact with one  
tail

#### contact resistance:

30 millivolts maximum at rated current

#### board thickness:

.054 (1.37) to .071 (1.80)

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# 225 series commercial connectors – solder termination, folded ribbon contacts

.156" (3.96) centers x .140" (3.56)  
row spacing  
.156" (3.96) centers x .200" (5.08)  
row spacing

## operating voltage:

600 VAC (RMS) at sea level  
150 VAC (RMS) at 70,000 feet

## current rating:

5 amps

## dielectric material:

**wire wrappable type** – electrical  
grade phenolic, black

**solder type** – glass filled  
phenolic, black

## insulation resistance:

5,000 megohms minimum

## contact material:

**wire wrappable type** – phosphor  
bronze plated .000020 (0.000508)  
min. gold over nickel

**solder type** – copper alloy .000020  
(0.000508) min. gold over nickel

## contact resistance:

30 millivolts maximum at rated current

## board thickness:

.054 (1.37) to .071 (1.80)

## polarizing keys



### 225-559

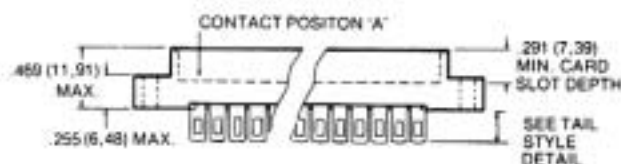
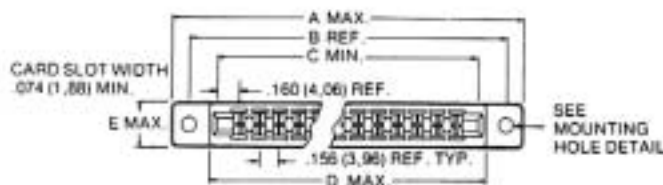
Over contact key must be ordered  
separately



### 225-594

Between contact key. One in-  
cluded for each connector  
Packed separately in bulk

Polarization can be achieved by using either of  
these types of polarizing keys on all eyelet and  
dip solder 225 Series Connectors



ALL DIMENSIONS REFERENCE ONLY

## dimensions

| SIZES | A MAX.         | B REF.         | C MIN.         | D MAX.         | E MAX.       |
|-------|----------------|----------------|----------------|----------------|--------------|
| 06    | 1.864 (47.34)  | 1.532 (38.91)  | 1.095 (27.81)  | 1.240 (31.50)  | .346 (8.79)  |
| 10    | 2.478 (62.94)  | 2.156 (54.76)  | 1.715 (43.56)  | 1.864 (47.35)  | .346 (8.79)  |
| 15    | 3.258 (82.75)  | 2.938 (74.63)  | 2.494 (63.34)  | 2.646 (67.21)  | .346 (8.79)  |
| 18    | 3.726 (94.64)  | 3.406 (86.51)  | 2.965 (75.31)  | 3.115 (79.12)  | .346 (8.79)  |
| 22    | 4.350 (110.49) | 4.029 (102.33) | 3.584 (91.03)  | 3.740 (94.99)  | .350 (8.89)  |
| 25    | 4.820 (122.43) | 4.496 (114.21) | 4.054 (102.97) | 4.204 (106.78) | .346 (8.79)  |
| 28    | 5.274 (133.96) | 4.958 (125.93) | 4.512 (114.60) | 4.662 (118.41) | .503 (12.78) |
| 36    | 6.522 (165.66) | 6.213 (157.81) | 5.765 (146.43) | 5.910 (150.11) | .503 (12.78) |
| 43    | 7.610 (193.29) | 7.296 (185.31) | 6.854 (174.09) | 7.010 (178.05) | .506 (12.85) |

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# 225 series commercial connectors – solder termination

## order information

To order the 225 series connector required, put together the part number as per the following example:

**2 2 5 - 2 0 6 2 1 - 4 01 (117)**

**SERIES NUMBER**  
225-

**TERMINATION CLASS**  
Digit Termination  
2 Solder

**CONTACT POSITIONS**

| Digit Group | No. of Contacts |
|-------------|-----------------|
| 06          | 6 or 12         |
| 10          | 10 or 20        |
| 15          | 15 or 30        |
| 18          | 18 or 36        |
| 22          | 22 or 44        |
| 25          | 25 or 50        |
| 28          | 28 or 56        |
| 36          | 36 or 72        |
| 43          | 43 or 86        |

**CONTACT CONFIGURATION**

- Single row connector with back-up springs
- Two rows of independent contacts
- Two rows of bridged contacts with one tail

\*Available in Solder Eyelet (01) and .235 (5.97) Dip Solder (04) Terminations only. Not available in 36 terminations.

**MOUNTING PROVISIONS**

**MOUNTING HOLE FOR #4 SCREW**

**FLOAT MOUNTING FOR #4 SCREW**

\*Available in Solder Eyelet (01) Termination only

**THREADED HOLE**

**MOUNTING HOLE FOR #6 SCREW**

**DEVIATIONS**  
(117) Commercial Type

**TAIL STYLE**  
All contacts on .156 (3.96) REF. centers

**01 Style Eyelet Type Solder Termination**

**01 Style Eyelet Type Down-the-Center**

**04 Down-the-Center**

**04 Dip Solder**

**07 Style**

**10 Style**

**CONTACT PLATING**  
Digit Plating  
4 .00020 (0.000508) min. Gold over nickel



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# 225 series industrial connectors – solder termination, bifurcated bellows contacts

.156" (3.96) centers x .140" (3.56)  
row spacing

.156" (3.96) centers x .200" (5.08)  
row spacing

## operating voltage:

600 VAC (RMS) at sea level

150 VAC (RMS) at 70,000 feet

## current rating:

5 amps

## dielectric material:

**solder type** - blue glass-fiber-reinforced  
diallyl phthalate type SDG-F per  
MIL-M-14.

## insulation resistance:

5,000 megohms minimum

## contact material:

**solder-type** - all copper alloy  
except phosphor bronze for bridged  
contact with one tail

## contact resistance:

30 millivolts maximum at rated current

## board thickness:

.054 (1.37) to .071 (1.80)

## polarizing keys



### 225-559

Over contact key must be  
ordered separately.

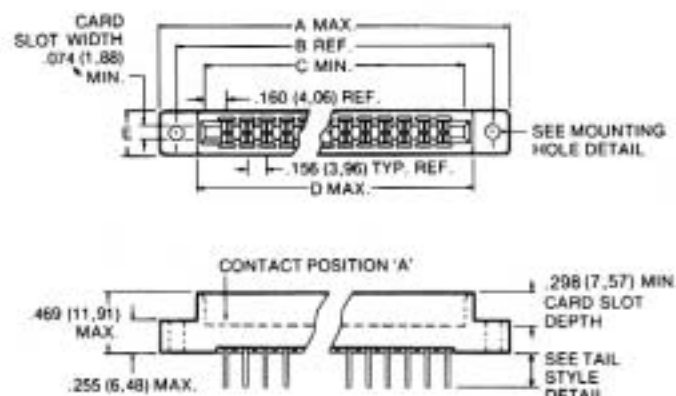
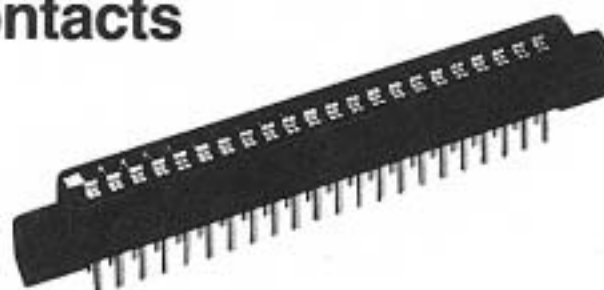
### 225-594

Between contact key. One  
included for each connector.  
Packed separately in bulk.

Polarization can be achieved by using either of  
these types of polarizing keys on all eyelet and  
dip solder 225 Series Connectors

## dimensions

| SIZES | A MAX.         | B REF.         | C MIN.         | D MAX.         | E MAX.      |
|-------|----------------|----------------|----------------|----------------|-------------|
| 06    | 1.854 (47.09)  | 1.532 (38.91)  | 1.095 (27.81)  | 1.240 (31.50)  | 346 (8.79)  |
| 10    | 2.478 (62.94)  | 2.156 (54.76)  | 1.719 (43.66)  | 1.864 (47.35)  | 346 (8.79)  |
| 15    | 3.258 (82.75)  | 2.938 (74.63)  | 2.499 (63.47)  | 2.646 (67.21)  | 346 (8.79)  |
| 18    | 3.726 (94.64)  | 3.406 (86.51)  | 2.967 (75.36)  | 3.115 (79.12)  | 346 (8.79)  |
| 22    | 4.360 (110.74) | 4.032 (102.41) | 3.591 (91.21)  | 3.750 (95.25)  | 350 (8.89)  |
| 28    | 5.274 (133.96) | 4.964 (126.08) | 4.525 (114.93) | 4.662 (118.41) | 503 (12.78) |
| 36    | 6.522 (165.66) | 6.219 (157.96) | 5.773 (146.63) | 5.910 (150.11) | 503 (12.78) |
| 43    | 7.610 (193.29) | 7.302 (185.47) | 6.866 (174.39) | 7.010 (178.05) | 503 (12.78) |



ALL DIMENSIONS REFERENCE ONLY

WPI 225 series printed circuit  
industrial connectors with solder  
terminations are intended for flush  
installation on printed circuit boards  
with pads and spacer barriers that  
permit thorough flux washing.  
Connectors with solder eyelets will  
accept up to three #20 AWG wires.  
All dip-solder terminals are designed  
for .043" (1.09 mm) min. diameter  
holes.

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# 225 series industrial connectors — solder termination

## order information

To order the 225 series connector required, put together the part number as per the following example:

2 2 5 - 2 0 6 2 1 - 1 0 1

**SERIES NUMBER**  
225-

**TERMINATION CLASS**  
Digit Termination  
2 Solder

### CONTACT POSITIONS

| Digit Group | No. of Contacts |
|-------------|-----------------|
| 05          | 6 or 12         |
| 10          | 10 or 20        |
| 15          | 15 or 30        |
| 18          | 18 or 36        |
| 22          | 22 or 44        |
| 25          | 25 or 50        |
| 28          | 28 or 56        |
| 36          | 36 or 72        |
| 43          | 43 or 86        |

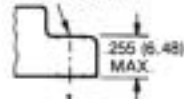
### CONTACT CONFIGURATION

- 1 Single row connector with back-up springs.
- 2 Two rows of independent contacts.
- 5\*\* Two rows of bridged contacts with one tail.

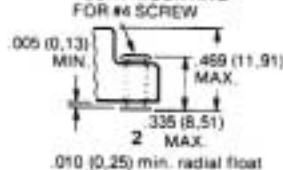
\*\* Available in Phosphor Bronze only

### MOUNTING PROVISIONS

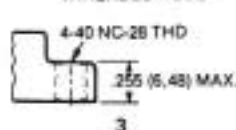
MOUNTING HOLE FOR #4 SCREW



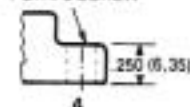
FLOAT MOUNTING FOR #4 SCREW



THREADED HOLE

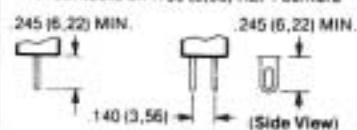


MOUNTING HOLE FOR #6 SCREW

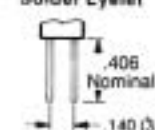


### TAIL STYLES

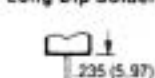
All contacts on .156 (3.96) REF. centers



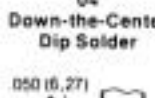
01 Solder Eyelet



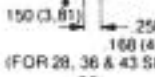
03 Long Dip Solder



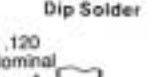
04 Down-the-Center Dip Solder



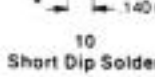
05 Right Angle Dip Solder



10 Short Dip Solder



11 Long Dip Solder



### CONTACT PLATING

| Digit |                                             |
|-------|---------------------------------------------|
| 1     | .000030 (0.000762) min.<br>Gold over Nickel |
| 2     | .000050 (0.00127) min.<br>Gold over Nickel  |



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# 225 series military qualified connectors - solder termination, bifurcated bellows MIL-C-21097 E/21

.156" (3.96) centers x .140" (3.56)  
row spacing  
.156" (3.96) centers x .200" (5.08)  
row spacing

## operating voltage:

600 VAC (RMS) at sea level  
150 VAC (RMS) at 70,000 feet

## temperature range:

-65°C to +125°C  
(-85°F to +257°F)

## contact material:

all beryllium copper except phosphor  
bronze for bridged contact with one  
tail

## contact resistance:

30 millivolts maximum at rated current

## board thickness:

.054 (1.37) to .071 (1.80)

## current rating:

5 amps continuous

## dielectric material:

blue glass-fiber-reinforced diallyl  
phthalate type SDG-F per MIL-M-14

## insulation resistance:

5,000 megohms minimum

## polarizing keys



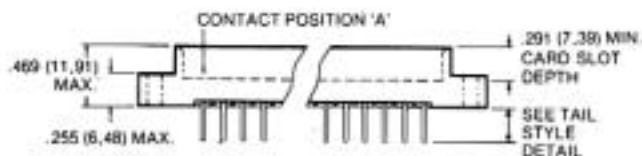
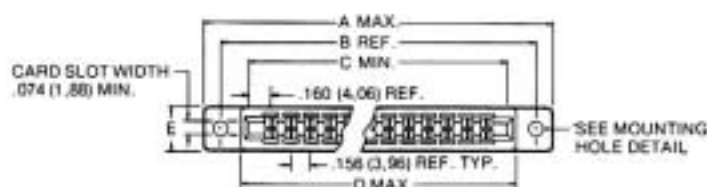
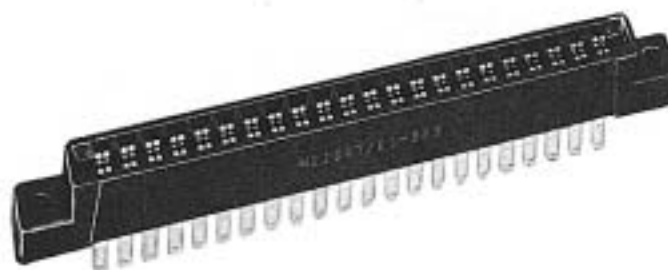
### 225-559

Over contact key must be ordered  
separately.



### 225-594

Between contact key. One includ-  
ed for each connector. Packed  
separately in bulk.



ALL DIMENSIONS REFERENCE ONLY

WPI 225 series printed circuit  
military connectors with solder  
terminations are intended for flush  
installation on printed circuit boards  
with pads and spacer barriers that  
permit thorough flux washing.  
Connectors with solder eyelets will  
accept up to three #20 AWG wires.  
All dip-solder terminals are designed  
for .043" (1.09 mm) min. diameter  
holes.

## dimensions

| SIZES | A MAX.         | B REF.         | C MIN.         | D MAX.         | E MAX.       |
|-------|----------------|----------------|----------------|----------------|--------------|
| 06    | 1.854 (47.09)  | 1.532 (38.91)  | 1.095 (27.81)  | 1.240 (31.50)  | .346 (8.79)  |
| 10    | 2.478 (62.94)  | 2.156 (54.76)  | 1.719 (43.66)  | 1.864 (47.35)  | .346 (8.79)  |
| 15    | 3.258 (82.75)  | 2.938 (74.63)  | 2.499 (63.47)  | 2.646 (67.21)  | .346 (8.79)  |
| 18    | 3.726 (94.64)  | 3.406 (86.51)  | 2.967 (75.36)  | 3.115 (79.12)  | .346 (8.79)  |
| 22    | 4.360 (110.74) | 4.032 (102.41) | 3.591 (91.21)  | 3.750 (95.25)  | .350 (8.89)  |
| 28    | 5.274 (133.96) | 4.964 (126.08) | 4.525 (114.93) | 4.662 (118.41) | .503 (12.78) |
| 36    | 6.522 (165.66) | 6.219 (157.96) | 5.773 (146.63) | 5.910 (150.11) | .503 (12.78) |
| 43    | 7.610 (193.29) | 7.302 (185.47) | 6.866 (174.39) | 7.010 (178.05) | .503 (12.78) |

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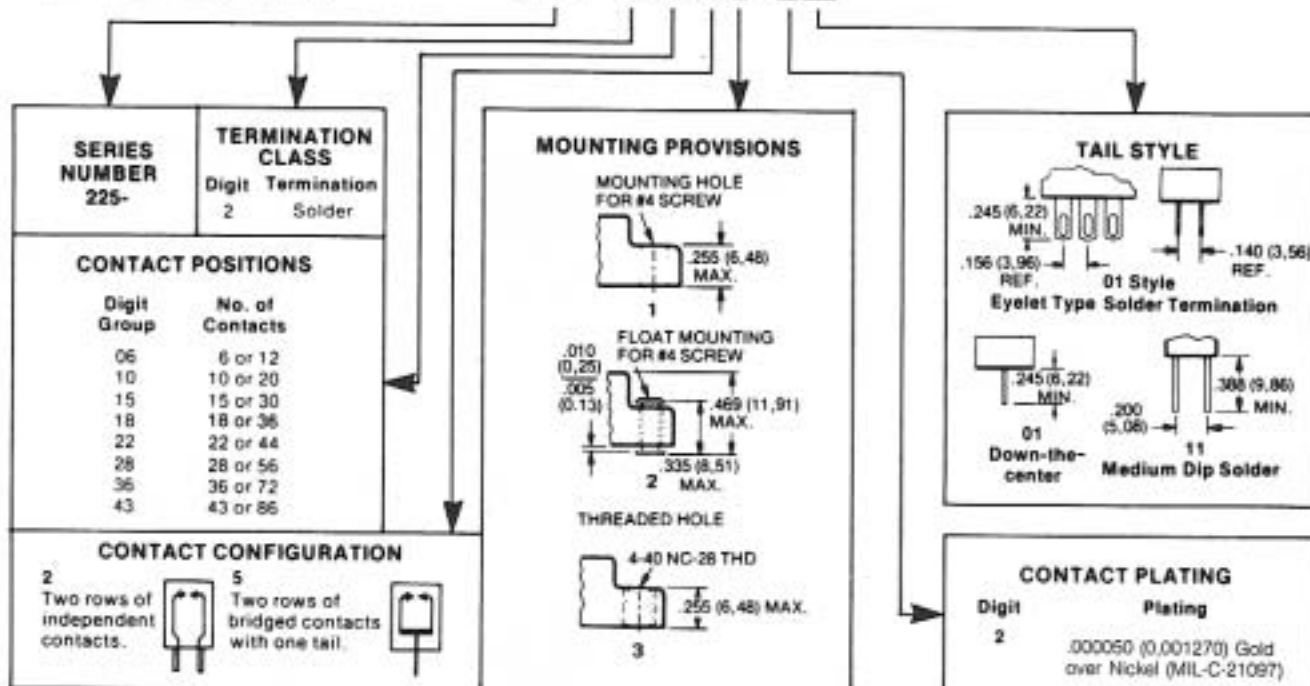
# 225 series military qualified connectors — solder termination

## MIL-C-21097 E/21

### order information

To order the 225 series connector required, put together the part number as per the following example:

2 2 5 - 2 0 6 2 1 - 2 0 1



### cross reference to MIL-C-21097E /21 (Also to MIL-C-21097/1)

| Military Number | WPI Number    | Military Number | WPI Number    | Military Number | WPI Number    | Military Number | WPI Number    |
|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| M21097E/21-001  | 225-20651-201 | M21097E/21-073  | 225-21551-201 | M21097E/21-145  | 225-22231-201 | M21097E/21-235  | 225-23621-201 |
| -004            | -20653-201*   | -076            | -21553-201*   | -148            | -22233-201*   | -236            | -23623-201*   |
| -007            | -20653-201*   | -079            | -21552-201*   | -151            | -22252-201*   | -241            | -23622-201*   |
| -019            | -20621-201    | -091            | -21521-201    | -163            | -22221-201    | -244            | -23621-211*   |
| -022            | -20623-201*   | -094            | -21523-201*   | -166            | -22223-201*   | -247            | -23623-211*   |
| -025            | -20622-201*   | -097            | -21522-201*   | -169            | -22222-201*   | -250            | -23622-211*   |
| -028            | -20621-211*   | -100            | -21521-211*   | -172            | -22221-211*   | -271            | -24321-201    |
| -031            | -20623-211*   | -103            | -21523-211*   | -175            | -22223-211*   | -274            | -24323-201*   |
| -034            | -20622-211*   | -106            | -21522-211*   | -178            | -22222-211*   | -277            | -24322-201*   |
| -037            | -21051-201    | -109            | -21851-201    | -181            | -22851-201    | -280            | -24321-211*   |
| -040            | -21053-201*   | -112            | -21853-201*   | -184            | -22853-201*   | -283            | -24323-211*   |
| -043            | -21052-201*   | -115            | -21852-201*   | -187            | -22852-201*   | -286            | -24322-211*   |
| -055            | -21021-201    | -127            | -21821-201    | -199            | -22821-201    |                 |               |
| -058            | -21023-201*   | -130            | -21823-201*   | -202            | -22823-201*   |                 |               |
| -061            | -21022-201*   | -133            | -21822-201*   | -205            | -22822-201*   |                 |               |
| -064            | -21021-211*   | -136            | -21821-211*   | -208            | -22821-211*   |                 |               |
| -067            | -21023-211*   | -139            | -21823-211*   | -211            | -22823-211*   |                 |               |
| -070            | -21022-211*   | -142            | -21822-211*   | -214            | -22822-211*   |                 |               |

NOTE: Above parts include 4 keys. Part Number 225-594 (M21097/11-08).

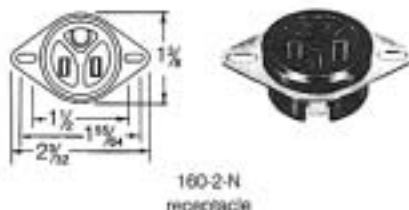
\*Non-stocking item—  
Consult factory for delivery.

# 125 V plugs and receptacles

Components UL recognized . . . for specifics, see charts below

## mounting plate type

Cadmium plated steel mounting plate assembled to molded thermo-plastic body. Mounting hole:  $1\frac{9}{32}$ " (32.54) dia. with two  $\frac{9}{64}$ " (3.57) slots on  $1\frac{1}{2}$ " (38.10) to  $1\frac{55}{64}$ " (47.22) centers.

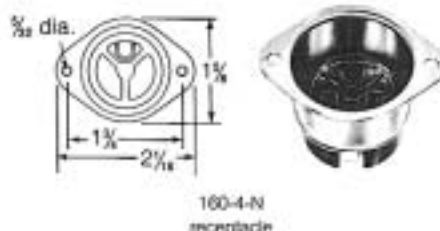


## MOUNTING PLATE TYPE

| Description                                | WPI Number | UL |
|--------------------------------------------|------------|----|
| 2 Pole Receptacle Phosphor Bronze Contacts | 160-2-N    | UL |
| 2 Pole Plug Brass Contacts                 | 160-3-N    | UL |

## flush motor type

Consists of inserts assembled in cadmium plated steel shells for below surface mounting. Mounting hole:  $1\frac{7}{16}$ " (36.53) dia. hole with two  $\frac{5}{32}$ " (3.96) screw holes on  $1\frac{3}{4}$ " (44.45) centers.

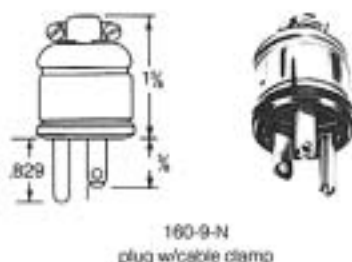


## FLUSH MOTOR TYPE

| Description                   | WPI Number | UL |
|-------------------------------|------------|----|
| 2 Pole Flush Motor Receptacle | 160-4-N    | UL |
| 2 Pole Flush Motor Plug       | 160-5-N    | UL |

## shielded type

Consists of inserts with sturdy steel plug caps finished in black epoxy. Plug caps:  $1\frac{1}{16}$ " (26.97) long. End nylon bushing:  $\frac{13}{32}$ " (10.31) I.D. Cable clamp: fits  $\frac{3}{8}$ " (9.52) O.D. cables.

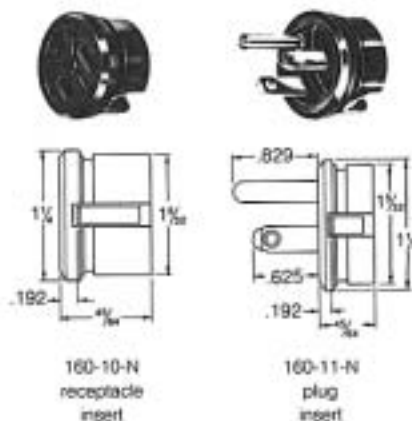


## SHIELDED TYPE

| Description                                | WPI Number | UL |
|--------------------------------------------|------------|----|
| 2 Pole Shielded Receptacle w/Nylon Bushing | 160-6-N*   | UL |
| 2 Pole Shielded Plug w/Nylon Bushing       | 160-7-N*   | UL |
| 2 Pole Shielded Receptacle w/Cable Clamp   | 160-8-N*   | UL |
| 2 Pole Shielded Plug w/Cable Clamp         | 160-9-N*   | UL |

## inserts

High temperature thermo-plastic bodies. Zinc plated retaining ring. Copper alloy contacts. Mounted in  $1\frac{11}{64}$ " (29.77) keyed hole. Grooved to fit .031" - (.079) - .050" (1.27) thick panels.



## INSERTS

| Description              | WPI Number | UL |
|--------------------------|------------|----|
| 2 Pole Receptacle Insert | 160-10-N   | UL |
| 2 Pole Plug Insert       | 160-11-N   | UL |

\*Non-stocking item —  
Consult factory for delivery.

UL listing file  
#E116778  
recognized under  
file #E115487



# 220 series contacts

## FOR 221, 222, 223 SERIES CONNECTOR

### Ultra-Tac Contacts

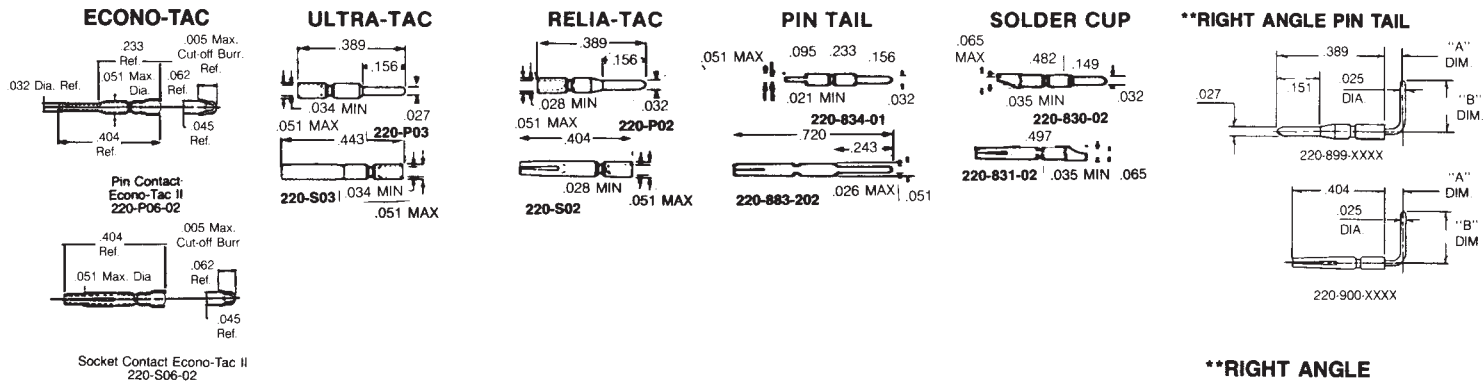
Top quality micro-miniature contacts. The socket contacts are hooded to resist test prod damage.

### Relia-Tac Contacts

Durable, customer-proven contacts.

| Part Number                             | Description                                                                |
|-----------------------------------------|----------------------------------------------------------------------------|
| 220-P02 (Pin)<br>220-S02 (Socket)       | Standard, See specifications below                                         |
| 220-844-02 (Pin)<br>220-845-02 (Socket) | Same as above, except heavy gold plating and inspection hole in crimp area |

### specifications



|                                     | ECONO-TAC                               | ULTRA-TAC                               | RELIA-TAC                               | PIN TAIL                                | SOLDER CUP                              | **RIGHT ANGLE PIN TAIL                  |
|-------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|
| Current (Amps) Rating               | 5                                       | 5                                       | 5                                       | 5                                       | 5                                       | 5                                       |
| Contact Resistance* (ohms)          | .0060                                   | .0060                                   | .0060                                   | .0050 to .0060                          | .0060                                   | .0060                                   |
| Wire Range (Ga.) (Solid & Stranded) | 24,26,28                                | 22,24,26                                | 24,26,28                                | N/A                                     | 24,26,28                                | N/A                                     |
| Contact Finish                      | Gold-over-Copper on Copper Alloy Bodies | Gold-over-Copper on Copper Alloy Bodies | Gold-over-Copper on Copper Alloy Bodies | Gold-over-Copper on Copper Alloy Bodies | Gold-over-Copper on Copper Alloy Bodies | Gold-over-Copper on Copper Alloy Bodies |

\* Constant to a minimum of 100 cycles of insertion and withdrawal.

### Ordering Information

Minimum order quantity is 100 pieces.  
Contacts can be supplied on reels for use in semi-automatic, crimp machines.  
Contact factory.

**NOTE:** All socket contacts are completely shrouded within the plug inserts for optimum protection against damage. Pin contacts are normally exposed when assembled into receptacle inserts.

### \*\*Right Angle Pin Tail Dimensions

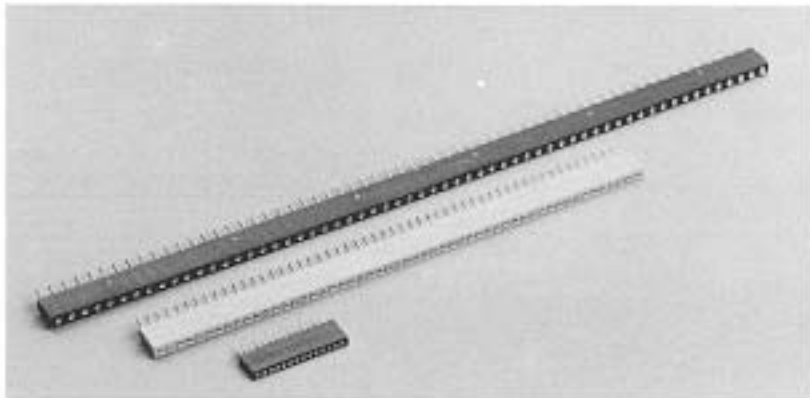
| Pin          | Socket       | "A"  | "B"  | Series Used On |
|--------------|--------------|------|------|----------------|
| 220-899-01XX | —            | .166 | .306 | 223            |
| —            | 220-900-01XX | .166 | .306 | 223            |
| 220-899-02XX | —            | .080 | .220 | 223            |
| —            | 220-900-02XX | .080 | .220 | 223            |
| 220-899-03XX | —            | .080 | .172 | 221            |
| —            | 220-900-03XX | .080 | .172 | 221            |
| —            | 220-900-04XX | .180 | .306 | 223            |

**NOTE:** Substitute XX with:  
02 - .000020" Gold over Nickel  
03 - Bright Tin/Lead



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# 221 series strip connectors



WPI Strip Connectors are highly reliable, low cost micro-miniatures with great application versatility. They are furnished in 4" and 6" lengths, but you can cut and stack them to whatever configuration you need to satisfy your various application requirements.

Strip connectors use Poke-Home contacts and perform superbly. Where keying is desired, guide pins are inserted in two or more plug strip contact holes.

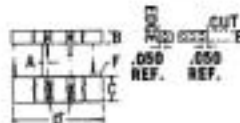
Because Strip connectors are injection molded, special configurations can be produced quickly and inexpensively.



Strips can be used in stacked arrangement. Should be stacked parallel only.



PC board application using strip connectors.



## CUSTOM LENGTH

Number of holes multiplied by contact center dimension equals approximate length of strip.

## dimensions

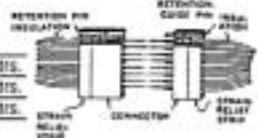
| Description         | A<br>Contact<br>Centers | B    | C    | D    | E    | F<br>Contact<br>Positions |
|---------------------|-------------------------|------|------|------|------|---------------------------|
| 6" Plug Strip       | .100                    | —    | .456 | 6.00 | .105 | 60                        |
| 6" Receptacle Strip | .100                    | .230 | —    | 6.00 | .105 | 60                        |
| 4" Plug Strip       | .075                    | —    | .456 | 4.00 | .105 | 53                        |
| 4" Receptacle Strip | .075                    | .230 | —    | 4.00 | .105 | 53                        |
| 2" Plug Strip       | .050                    | —    | .281 | 4.00 | .075 | 40                        |
| 2" Receptacle Strip | .050                    | .218 | —    | 4.00 | .075 | 40                        |

## Strain Relief Strips Protect Wire

WPI has a solution to the problem of excessive flexing that breaks wire strands in cable-terminated applications. Strain relief strips are available to encase and protect the wire in the crimp area at the rear of the strips. Molded in black Nylon 6/6 material, the strips can be ordered to match any WPI strip connector. Held in place by retention pins, which can also be used as a guide pin.

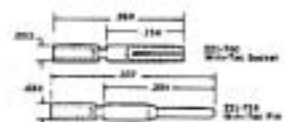
## Ordering Information

221-9160—for use with strip connectors on .100 ctrs.  
221-9253—for use with strip connectors on .075 ctrs.  
221-9380—for use with strip connectors on .050 ctrs.



## Mini-Tac Contacts

(Sub-miniature Relia-Tac contacts for .050" center mini-strip connectors only).  
**Current Rating:** 3 Amps.  
**Wire Size:** 26 to 32 ga. stranded wire.



## Ordering Information

Standard and custom lengths.

| Series Designation | 221                                                    | 1                                                                    | 5                                    | 02 |
|--------------------|--------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------|----|
| Contact Centers    | 1—.100 in.<br>2—.075 in.<br>3—.050 in.<br>(only Nylon) | Insert Style<br>1—Plug, polycarbonate<br>2—Receptacle, polycarbonate | 5—Plug, Nylon<br>6—Receptacle, Nylon |    |

### Note: Order Contacts Separately

Use Relia-Tac pin contacts for receptables; socket contacts for plugs.

Number of Contact Holes needed: from 02 to 60 on .100 centers (standard 6" strip contains 60 holes); from 02 to 53 on .075 centers (standard 4" strip contains 53 holes); from 02 to 40 on .050 centers (standard 2" strip contains 40 holes).

Note: Must use 2 digits.

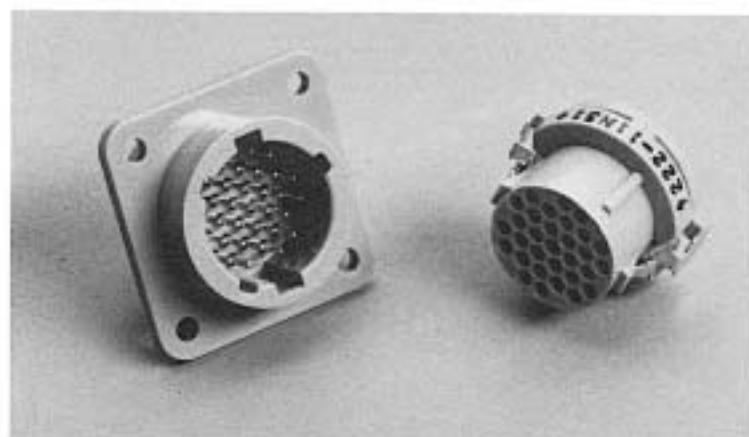
## Poke-Home® Guide Pins

Poke-Home guide pins when seated in plug inserts serve functions of polarizing, keying or connector alignment. They can be used in conjunction with Relia-Tac contacts. Contact factory for information.



# 222 series — Mighty Mite® connectors

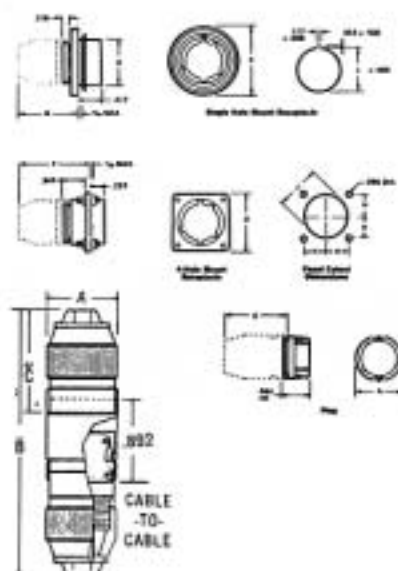
19 to 61 Contacts — .085 Contact Centers



## Superior Performance at Low Cost

WPI Mighty-Mite connectors are low cost, highly reliable micro-miniature connectors designed to serve an exceptionally wide range of cable-to-cable and cable-to-chassis applications.

Mighty-Mite connectors are available as straight plus, single hole mounting, square flange, and cable receptacles. Standard connectors are molded of one-piece, rugged polycarbonate.



## arrangements

inserts available (Showing front face of plug insert)

| Shell Size                                                                            | 12                | 14                | 18                |
|---------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|
| rated 5 amperes<br>for wire sizes<br>24-26-28<br>solid<br>and<br>24-26-28<br>stranded |                   |                   |                   |
|                                                                                       | 19 contacts 12-19 | 31 contacts 14-31 | 61 contacts 18-61 |

|                            | No. of Contacts |         |         |
|----------------------------|-----------------|---------|---------|
|                            | 19              | 31      | 61      |
| A ref. diameter            | .621            | .746    | .990    |
| B ref. length              | 2.618           | 2.948   | 3.530   |
| C ref. length              | .962            | 1.134   | 1.418   |
| D ref. square              | .875            | 1.000   | 1.250   |
| E ref. diameter            | 1.065           | 1.189   | 1.444   |
| F ref. length              | 1.278           | 1.450   | 1.734   |
| G ref. length              | 1.084           | 1.256   | 1.540   |
| H length                   | .312            | .375    | .500    |
| J diameter                 | .636            | .761    | 1.011   |
| Strain Relief Assembly No. | 222-518         | 222-519 | 222-520 |
| Retaining Ring No.         | 2-311           | 2-312   | 2-313   |

## ordering information

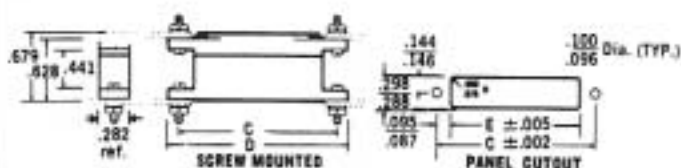
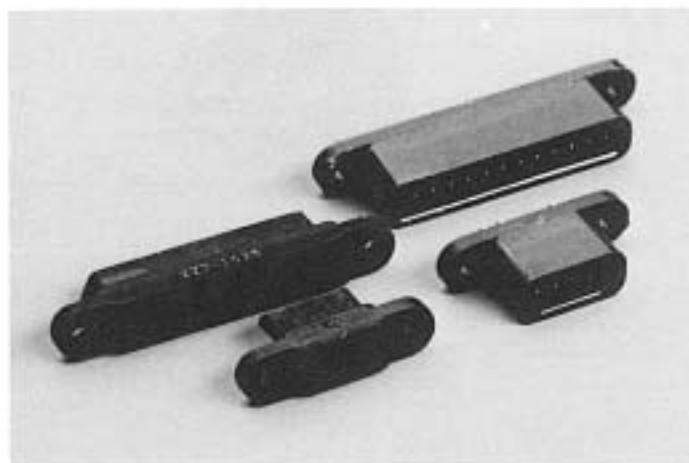
|                                                          |     |   |   |   |    |                                      |
|----------------------------------------------------------|-----|---|---|---|----|--------------------------------------|
| Series Designation 222                                   | 222 | 1 | 1 | N | 61 | Number of Contacts 19, 31, 61        |
| Method of Mounting                                       |     |   |   |   |    | Connector Class: N—Non-environmental |
| 1—Flangeless                                             |     |   |   |   |    |                                      |
| 2—4 hole mount receptacle                                |     |   |   |   |    | Insert Style                         |
| 3—Single hole mount Receptacle (includes retaining ring) |     |   |   |   |    | 1—Plug                               |
|                                                          |     |   |   |   |    | 2—Receptacle                         |

Note: Order Contacts Separately



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# 223 series – Tiny Tim<sup>®</sup> connectors



Exceptional interconnections for circuit modules, either potted-in or surface mounted, and can also be used as micro-miniature rack-and-panel, cable-to-cable, and cable-to-panel connectors.

The positive mating is the result of the snap latch engagement locking device molded into the connector body. Contact identification numbers are also molded in.

Trapezoidal mating faces are used for polarization. Guide pins provide keying. Contact spacing is .100" on centers on each row.

## specifications

**Temperature Range:** -55°C to +125°C

**Current Rating:** 3 amps (Econo-Tac II contacts)  
5 amps (all other contacts)

**Voltage Rating:** 600 VAC (RMS) at sea level  
125 VAC (RMS) at 70,000 ft.

**Dielectric:** Glass-filled nylon (polycarbonate resin also available)

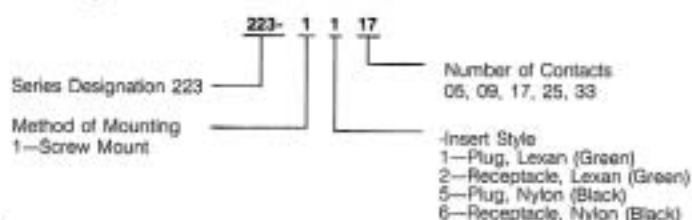
**Strain relief** 223-714-09 — 9 contacts; 223-714-17 — 17 contacts; 223-714-25 — 25 contacts; 223-714-33 — 33 contacts.

## dimensions

| No. of Contacts | E Length of Cutout | C Mounting Centers | D ref. Overall Length |
|-----------------|--------------------|--------------------|-----------------------|
| 5               | .410 (10.414)      | .593 (15.052)      | .843 (21.438)         |
| 9               | .610 (15.494)      | .793 (20.142)      | 1.043 (26.518)        |
| 17              | 1.015 (25.781)     | 1.193 (30.302)     | 1.443 (36.678)        |
| 25              | 1.410 (35.814)     | 1.593 (40.462)     | 1.843 (46.838)        |
| 33              | 1.810 (45.974)     | 1.993 (50.622)     | 2.243 (56.998)        |

Use Relia-Tac pin contacts for receptacles, socket contacts for plugs.

## ordering information



NOTE: Order Contacts Separately. See Section 9 Page 1

## Strain Relief

Thermoplastic cable clamp strain relief housings for use with above connectors:

| Contact Size | Part No.   | Contact Size | Part No.   |
|--------------|------------|--------------|------------|
| 9            | 223-714-09 | 25           | 223-714-25 |
| 17           | 223-714-17 | 33           | 223-714-33 |



# military audio connectors 5 & 6 contact MIL-C-55116

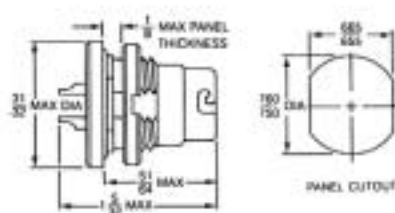
## U-183/U Receptacle

Spring-loaded contacts, **five or six contacts**, solder terminals.  
Also available with printed circuit terminals.

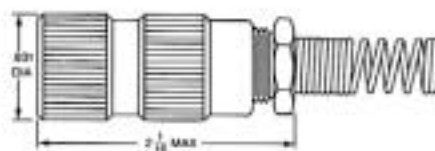
## U-229/U Plug

Rigid contacts, barrel pin terminals, **five or six contacts**. Also available with solder terminals.

Consult factory for additional specials and modifications.



U-183/U



U-229/U

## material & finish

**shells:** stainless steel, passivated, sand-blasted

**panel nuts:** stainless steel, passivated, sand-blasted

**contacts:** copper alloy, .000030 gold per MIL-G-45204,  
Type I class 0 over .001 nickel per QQ-N-290

**insulators:** diallyl phthalate per MIL-M-14F, Type MDG

## electrical specifications

**dielectric strength:** 500 V RMS

**insulation resistance:** 1000 Megohms. Min.

**contact resistance (mated):** 0.050 Ohms. Max.

## mechanical specifications

**air pressure:** 2.5 psi.

**immersion:** 48 hrs. at 6 ft.

**durability:** 3000 cycles, mate and unmated



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# military audio connectors (cont.)

## 10 contact MIL-C-10544

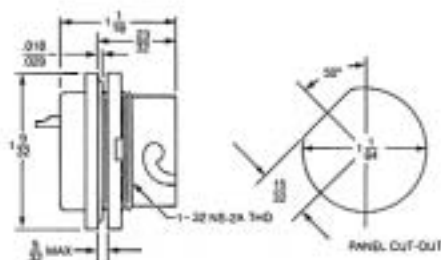
### U-79/U Receptacle

Spring-loaded contacts, solder terminals. Also available with printed circuit terminals.

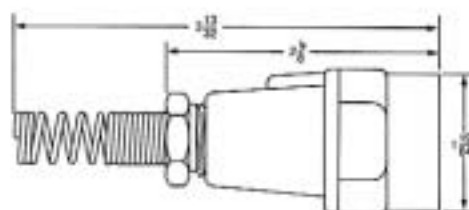
### U-77/U Plug

Rigid contacts, solder terminals.

Consult factory for additional specials and modifications.



U-79/U



U-77/U

### material & finish

**receptacle shells:** stainless steel, passivated, sand-blasted

**plug shells:** stainless steel, black passivated

**plug rear housings:** aluminum, black anodized

**panels nuts:** stainless steel, passivated, sand-blasted

**contacts:** copper alloy, .0002 silver

**insulators:** diallyl phthalate per MIL-M-14F, Type MDG

### electrical specifications

**dielectric strength:** 500 V RMS

**insulation resistance:** 1000 Megohms. Min.

**contact resistance (mated):** 0.015 Ohms. Max.

### mechanical specifications

**air pressure:** 2.5 psi

**immersion:** 48 hrs. at 6 ft.

**durability:** 1500 cycles, mate and unmate

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## **military u-type power connectors**

### **U-288/U receptacle MIL-C-55243**

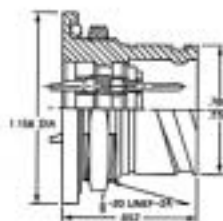


Multi-use, medium power receptacle. 12 # 20 pin contacts. Used in many military communications equipment such as AS 1729 antenna.

#### **material & finish**

**body:** stainless steel, cadmium plate with olive drab chromate

**contacts:** copper alloy, gold per MIL-G-45204 Type II Grade C Class I over nickel



### **U-237 B/G power plug cable mount MIL-C-55449**



### **U-238 B/G power receptacle panel mount MIL-C-55449**



Used to supply power to area-type communications systems. Four contacts, hermaphroditic. Consult factory for availability of other U-types.



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# military MW power connectors

## MIL-C-55181

### MW 20 receptacles



M55181/2-01  
MW20M(M)A00



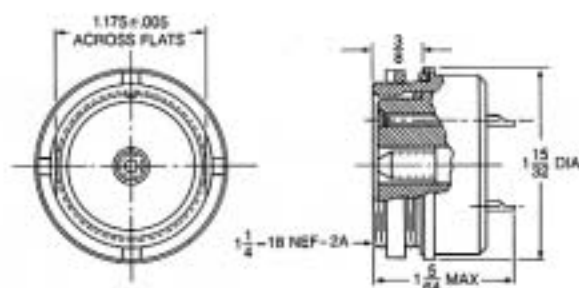
M55181/4-01  
MW20F(M)A00



M55181/6-01  
MW20F(M)B00



M51181/8-01  
MW20F(M)D00



### material & finish

**shells, plugs:** aluminum alloy, .0003 cadmium plate with olive drab chromate per MIL-F-14072

**shells, receptacles:** brass, .0003 cadmium plate with olive drab chromate per MIL-F-14072

**drawscrews:** stainless steel

**contacts, socket:** high conductivity copper alloy with beryllium copper spring element, .000030 gold over .0001 Ni per QQ-N-290

**contacts, pin:** yellow brass, .000030 gold over .0001 Ni per QQ-N-290

**insulators:** neoprene and/or glass-filled diallyl phthalate, type GDI-30 per MIL-M-14F

### electrical specifications

**dielectric strength:** 4 contacts: 2000 V RMS, 9 & 18 contacts: 1500 V RMS

**insulation resistance:** 1000 Megohms min. at 500 V DC

**voltage drop:** 4 contacts: 20 MV at 35 A, 9 & 18 contacts: 25 MV at 7.5 A

### mechanical specifications

**air pressure:** 2.5 psi

**water immersion:** 48 hrs. at 6 ft.

**durability:** 500 cycles with coupling torque of 12 in.-lbs.

**contact retention:** 10 lbs.

**insert strength:** 400 lbs.

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# military UW power connectors

## MIL-C-12520

### plugs



UW1220



UW1320



UW1326

### receptacles



UW2020



UW2026

### material & finish

**shells, plugs:** aluminum alloy, .0003 cadmium plate with olive drab chromate per MIL-F-14072

**shells, receptacles:** brass, .0003 cadmium plate with olive drab chromate per MIL-F-14072

**nosepieces:** alloy steel, .0003 cadmium plate with olive drab chromate per MIL-F-14072

**drawscrews:** stainless steel

**contacts, socket:** high conductivity copper alloy with beryllium copper spring element, .000030 gold over .0001 copper

**contacts, pin:** yellow brass, .000030 gold over .0001 copper

**insulators:** neoprene and/or glass-filled diallyl phthalate, type GDI-30 per MIL-M-14F

### electrical specifications

**dielectric strength:** 4, 9, & 14 contacts: 2800 V RMS, 19 & 30 contacts: 2000 V RMS

**insulation resistance:** 1000 Megohms min. at 500 V DC

**voltage drop:** 4 contacts: 20 MV at 35 A, 9, 14, 19, & 30 contacts: 21 MV at 20 A

### mechanical specifications

**air pressure:** 2.5 psi

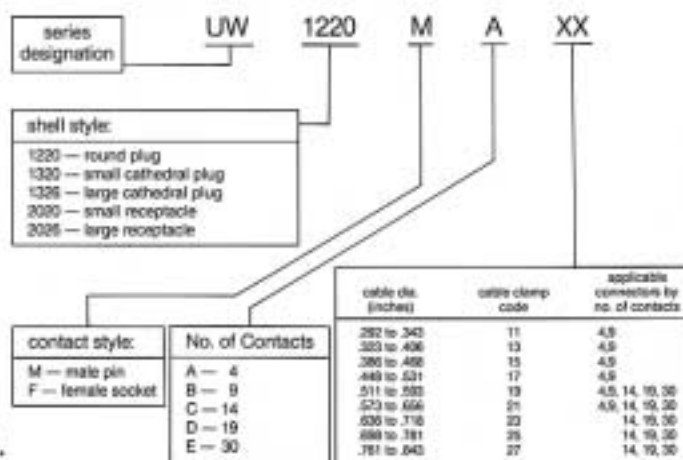
**water immersion:** 48 hrs. at 6 ft.

**durability:** 500 cycles with coupling torque of 25 in.-lbs.

**contact retention:** 15 lbs.

**insert strength:** 400 lbs.

### part numbering system



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# cap and chain assemblies

164 series caps and chains greatly expand connector application possibilities by giving additional protection against moisture, dust, and sand. They are available in numerous variations of chain styles, paint and plating and may be made to meet special applications or military drawing specifications.



| WPI Number | For Connector   |
|------------|-----------------|
| 164-377    | 164-7J U-79/U   |
| 164-895    | 164-183 U-183/U |



| WPI Number | USAECOM Number | Used with Connectors — UW Series   |
|------------|----------------|------------------------------------|
| 164-447    | MIL-C-12520-3X | 164-102-XXS, 164-202-XXS, 164-126F |
| 164-499    | MIL-C-12520-2X | 164-101-XXP                        |
| 164-507    | MIL-C-12520-1X | 164-101-XXS                        |
| 164-782    | MIL-C-12520-1N | 164-102-XXP, 164-202-XXP, 164-126M |
| 164-599    | MIL-C-12520-3N | 164-201-XXS, 164-120F              |
| 164-893-01 | MIL-C-12520-2N | 164-201-XXP, 164-120M              |

\*For other cap and chain assemblies, contact factory.

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# WPI® non-standard military connectors

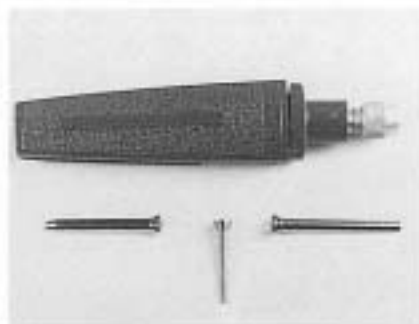
|            |                                                             |
|------------|-------------------------------------------------------------|
| CNI Series | ENVIRONMENTALLY-SEALED RECTANGULAR CONNECTORS               |
| CX Series  | VARIOUS MILITARY CONNECTORS AND/OR CABLE ASSEMBLY CALL OUTS |
| H Series   | NAVAL SOUND-POWERED CONNECTORS                              |
| Q Series   | MIL-C-55169 SUBMERSION-PROOF POWER CONNECTORS               |
| ONO Series | POKE-HOME RECTANGULAR COAX CONTACT CONNECTORS               |
| PL Series  | MILITARY CIRCULAR CONNECTORS                                |
| Q2 Series  | MIL-C-55169 SUBMERSION-PROOF POWER PLUGS                    |
| Q7A Series | MIL-C-55169 SUBMERSION-PROOF POWER RECEPTACLES              |
| 45 Series  | MIL-C-55169 SUBMERSION-PROOF POWER CONNECTORS               |
| 84 Series  | MINIATURE HIGH-TEMPERATURE "R" CONNECTORS                   |
| 89 Series  | SUBMERSION-PROOF POWER CONNECTORS                           |
| 93 Series  | POKE-HOME RECTANGULAR CONNECTORS                            |
| 94 Series  | POKE-HOME RECTANGULAR COMBINATION CONTACT CONNECTORS        |
| 126 Series | CNI ENVIRONMENTALLY-SEALED RECTANGULAR CONNECTORS           |
| 126 Series | MINIATURE RECTANGULAR CONNECTORS                            |
| 164 Series | MILITARY POWER CONNECTORS                                   |
| 246 Series | ENVIRONMENT-RESISTANT CONNECTORS                            |

Consult factory for specifications,  
samples, pricing, and delivery information.



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# termination tooling for 17/117/220 series



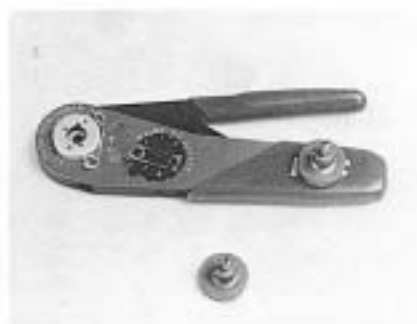
## insertion tool

**356-200** - tool handle only. Select correct insertion or removal bit from chart



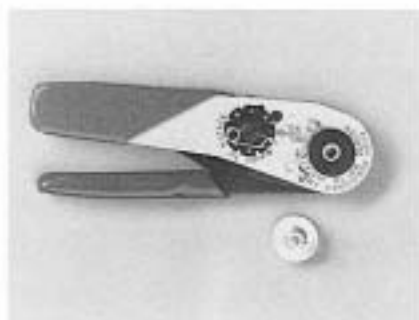
## removal tool

**356-271** - for 117/177/777 rear-release series - replaceable tips



## hand crimp tool

**357-100** - adjustable, 4-indent miniature to MIL-C-22520. Requires contact locator bushing. For specific contact used, see section 15, page 3.



## hand crimp tool for mini-tac contacts

**357-101** - adjustable, 4-indent miniature to MIL-C-22520. Requires contact locator bushing. For specific contact used, see section 15, page 3.



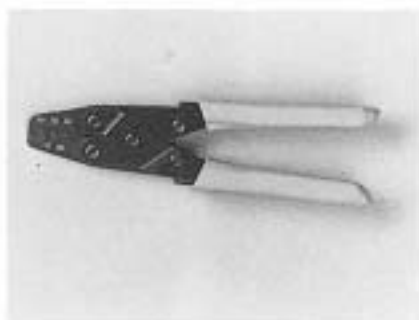
## hand crimp tool

**357-570** - used to crimp contacts - 220 stamped & formed



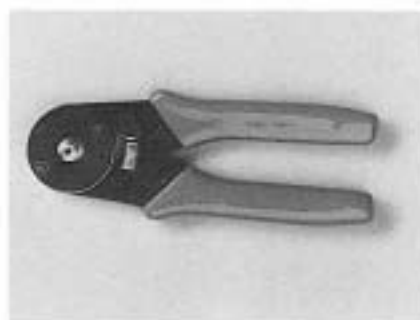
## hand crimp tool

**357-574** - Used to crimp contacts 17 - RRDX - FXX, 17 - RRDX - MXX 20-30 AWG wire.



## hand crimp tool

**357-2500** - economy tool for 117 rear-release contacts - ideal for occasional use



## hand crimp tool

**357-2501** - economy tool for 17 series - standard crimp contacts

## crimping procedure for 357-574 crimp tool

1. With locator side of tool facing downward, be sure that tool is completely open.
2. Place contact crimp barrel on correct anvil with open end facing toward crimp.
3. Properly locate contact by nesting slot in front of wire crimp barrel onto clip of locator. This should align both wire and insulation crimp barrels with their respective crimping jaws.
4. Slowly close handles until contact is locked into crimping die. Do not over-close.
5. Insert stripped wire to maximum depth. Be sure all strands of wire are inside barrel.
6. Close handles until ratchet disengages. Ratchet insures tool has completed crimp cycle and contact has been crimped before tool re-opens.

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# termination tooling



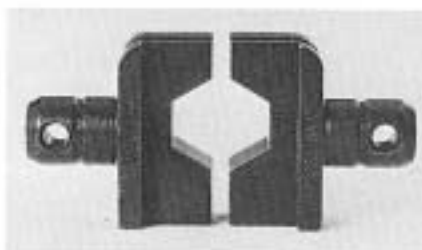
**manual-feed pneumatic crimp tool**  
**359-401** - 4-indent, cycle-controlled, less contact locator bushing. See chart for correct locator bushings and settings.



**semi-automatic stripper/crimper machine 359-634** - strips and terminates discrete wire to open barrel, reel fed contacts. Used on stamped and formed 117 series contacts, auto-feed system maximizes production of crimp terminations of non-metallic insulated wire in ranges of #30-20 AWG. Termination rates can easily exceed 1500 wires per hour.

## specifications

crimping speed:  
 up to 2,000 terminations per hour  
 contacts:  
 17 - RRDX - FXX male and 17 - RRDX - M02 female stamped and formed rear release contacts.  
 wire size:  
 20 to 24 gauge AWG  
 24 to 30 gauge AWG  
 dimensions:  
 33" wide x 21" deep x 13½" high.  
 weight:  
 190 lbs (approx.)  
 electrical requirements:  
 110 VAC standard 3 wire grounded supply  
 Meets all applicable OSHA standards.



**crimp die**  
**357-315-03**  
 hexagonal clamp die for use with hand crimp tool (357-115). For overmold can.



**hand crimp tool**  
**357-115**  
 economical hand tool, hexagonal ferrule crimp to cable and hood. Crimp die (357-315-03) purchased separately. For overmold can.



**d-sub field service kit**  
**17RR-232K**  
**RS232** - assortment of connectors, backshells, contacts, & crimp tools - comparable to AMP model 606064-2



**terminal & splice field service kit**  
**AI-177**  
 assortment of crimp-type terminals & splices, with hand-crimp tool



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# order information

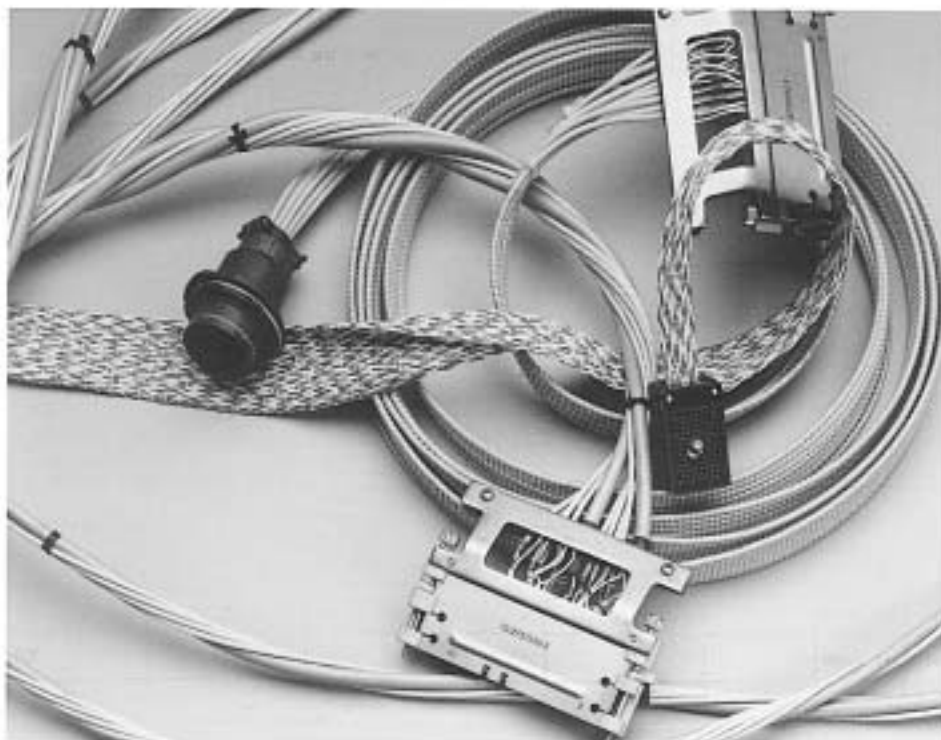
NOTE: (Use 356-200 handles for insertion/removal bits)

| Contact                    | Barrel<br>O.D./I.D. | Crimp<br>Tool   | Bushing<br>(Location)                          | Crimp Setting for Wire AWG.                             |                |                                                         |                      |                      |                      |                      |                | Insertion<br>Tool Bit                                                           | Removal<br>Tool Bit        |
|----------------------------|---------------------|-----------------|------------------------------------------------|---------------------------------------------------------|----------------|---------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------|---------------------------------------------------------------------------------|----------------------------|
|                            |                     |                 |                                                | 16                                                      | 18             | 20                                                      | 22                   | 24                   | 26                   | 28                   | 30             |                                                                                 |                            |
| 17-763(S)<br>17-766(P)     | .007/.045           | 357-100         | 357-300-02                                     |                                                         |                | #7<br>.038<br>± .003                                    | #6<br>.034<br>± .003 | #5<br>.030<br>± .003 |                      |                      |                | 356-400-1<br>or<br>356-400-10<br>(Encapsulated<br>Connector—<br>to 20 Ga. Wire) | 356-400-5<br><br>356-400-6 |
| 17-763(S)<br>17-766(P)     | .007/.045           | 357-2501        |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                |                                                                                 | 356-400-5<br>356-400-6     |
| 17-764(S)                  | .062/.045           | Solder          |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-1                                                                       | 356-400-5                  |
| 17-765(P)                  | .062/.045           | Solder          |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-1                                                                       | 356-400-6                  |
| 17-767(P)                  | .062/.045           | Solder          |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-1                                                                       | 356-400-6                  |
| 17-1005P                   | .106/.067           | consult factory |                                                | .058<br>± .003                                          | .053<br>± .003 |                                                         |                      |                      |                      |                      |                | 356-400-2                                                                       | 356-400-6                  |
| 17-1006(S)                 | .106/.067           |                 |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                |                                                                                 | 356-400-5                  |
| 17-1198(P)                 | .040 Tall           | Rt. Angle       |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-4                                                                       | 356-400-6                  |
| 17-1207(P)                 | .040 Tall           | Rt. Angle       |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-4                                                                       | 356-400-6                  |
| 17-1208(S)                 | .040 Tall           | Rt. Angle       |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-4                                                                       | 356-400-5                  |
| 17-1209(S)                 | .040 Tall           | Rt. Angle       |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-4                                                                       | 356-400-5                  |
| 17-1253(S)                 | .062/.045           | Solder          |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-1                                                                       | 356-400-5                  |
| 17-1308(S)                 | .077/.032           | 357-100         | 357-300-02                                     |                                                         |                |                                                         |                      | #7<br>.036<br>± .002 | #6<br>.032<br>± .002 | #5<br>.030<br>± .002 |                | 356-400-1                                                                       | 356-400-5                  |
| 17-1310(P)                 | .077/.032           |                 |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                |                                                                                 | 356-400-6                  |
| 17-RRD1-FXX<br>17-RRD1-MXX |                     | 357-574         |                                                |                                                         |                | Applicator for contacts on reels—<br>adj. crimp setting |                      |                      |                      |                      |                |                                                                                 | 356-271                    |
|                            |                     | 357-2500        |                                                |                                                         |                | .044<br>± .011                                          | .044<br>± .001       | .043<br>± .001       |                      |                      |                |                                                                                 | 356-400-31                 |
| 17-RRD2-MXX<br>17-RRD2-FXX |                     | 357-574         |                                                | Applicator for contacts on reels—<br>adj. crimp setting |                |                                                         |                      |                      | .026<br>± .001       | .026<br>± .001       | .026<br>± .001 | .026<br>± .001                                                                  | 356-271                    |
|                            |                     | 357-2500        |                                                |                                                         |                |                                                         |                      |                      |                      |                      |                |                                                                                 | 356-400-31                 |
| 220-802(S)                 | .049/.031           | 357-100         | 357-300-01                                     |                                                         |                |                                                         |                      | .024 ± .002          | .018 ± .002          | .015 ± .002          |                | 356-400-11                                                                      | 356-400-14                 |
| 220-P02(P)                 | .049/.031           | 357-100         | 357-300-08                                     |                                                         |                |                                                         |                      | .024 ± .002          | .018 ± .002          | .015 ± .002          |                | 356-400-11                                                                      | 356-400-15                 |
| 220-803(S)                 | .050/.036           | 357-100         | 357-300-03<br>357-104<br>357-310-03<br>359-400 |                                                         |                |                                                         |                      | .024 ± .002          | .020 ± .002          | .015 ± .002          |                | 356-400-11                                                                      | 356-400-14                 |
| 220-P03(P)                 | .050/.036           | 357-100         | 357-300-08                                     |                                                         |                |                                                         |                      | .024 ± .002          | .020 ± .002          | .015 ± .002          |                | 356-400-11                                                                      | 356-400-15                 |
| 220-830                    | —                   | Solder          | —                                              |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-11                                                                      | 356-400-15                 |
| 220-831                    | —                   | Solder          | —                                              |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-11                                                                      | 356-400-14                 |
| 220-834                    | —                   | Solder          | —                                              |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-11                                                                      | 356-400-15                 |
| 220-883                    | —                   | Solder          | —                                              |                                                         |                |                                                         |                      |                      |                      |                      |                | 356-400-11                                                                      | 356-400-15                 |
| 221-750(P)                 | .033/.023           | 357-101         | 357-301-03                                     |                                                         |                |                                                         |                      | .021/.018            | .018/.015            | .015/.012            |                | 356-400-20                                                                      | 356-400-21                 |
| 221-750(S)                 | .033/.023           | 357-101         | 357-301-03                                     |                                                         |                |                                                         |                      | .021/.018            | .018/.015            | .015/.012            |                | 356-400-20                                                                      | 356-400-22                 |

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# cable assemblies



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- **engineering / design**
- **resources**
- **manufacturing support**

WPI manufactures cable assemblies, wiring harnesses, and test probes for both military and commercial applications. Products range from simple test leads to highly complex molded and potted assemblies utilizing high reliability components that will survive the toughest environmental conditions.

WPI Cable Assembly Services has two locations (Salem, New Jersey and Sarasota, Florida), with two decades of manufacturing experience.

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23 Front Street  
Salem, NJ 08079  
P: 856-935-7560  
F: 856-935-0102  
W: [www.wpi-interconnect.com](http://www.wpi-interconnect.com)  
E: [info@wpi-interconnect.com](mailto:info@wpi-interconnect.com)