

# THREADED COUPLING, MIL-DTL-5015 TYPE Harsh Environment Power and Signal Interconnects



## 253-505 Environmental Stainless Steel PCB Jam-Nut Mount Receptacle MIL-DTL-5015 Series III Type

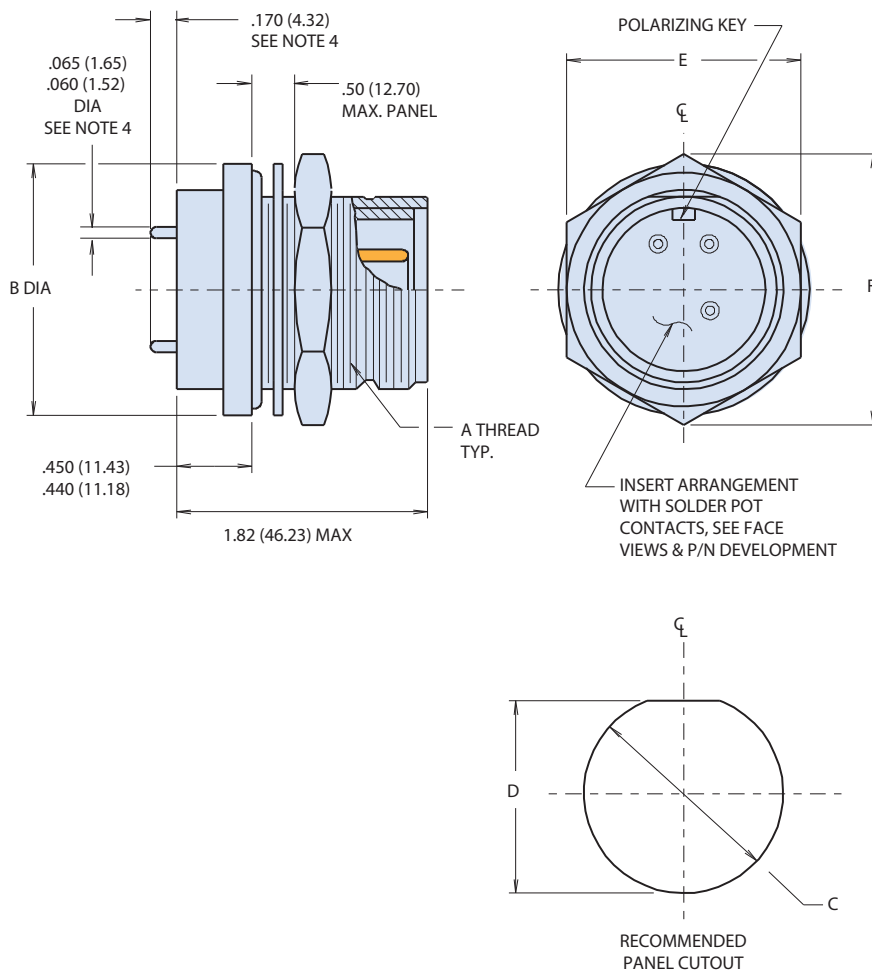
ENVIRONMENTAL CONNECTORS



| HOW TO ORDER                    |                                                                             |       |   |   |
|---------------------------------|-----------------------------------------------------------------------------|-------|---|---|
| Sample Part Number              | 253-505                                                                     | 14S-5 | P | W |
| Basic Part Number               | 253-505 = 5015 type, PCB receptacle                                         |       |   |   |
| Shell Size - Insert Arrangement | See shell size - insert arrangement; Contact factory for additional options |       |   |   |
| Contact Type                    | P = pin S = socket<br>See page 21 for for PCB footprints                    |       |   |   |
| Alternate Insert Position       | W, X, Y, Z, OMIT for normal; alternate insert positions on page 4           |       |   |   |

### NOTES:

1. Assembly identified with manufacturer's name and P/N, space permitting.
2. Material/finish:
  - Shell: passivated stainless steel
  - Insulator, o-ring, grommet: nitrile/neoprene
  - Contacts: gold plated copper alloy
3. Performance data
  - Contact current rating  
#20-5 amps, #16-10 amps,  
#12-17 amps, #8-35 amps.
  - Rated operating voltage  
service rating instrument: 250 VDC  
service rating A: 700 VDC.
  - DWV (hi-pot)  
service rating instrument: 1000 VRMS  
service rating A: 2000 VRMS.
  - Insulation resistance: 5000 megohms  
minimum at 500 VDC and +25°C
  - Temperature range: -55°C to +125°C
4. Extension and diameter of contacts apply to #16 contacts only, for other sizes, consult factory.
5. Electrical safety limits must be established by the user. Peak voltages, switching surges, transients, etc., should be used to determine safety of application.
6. Contact factory for additional insert arrangements and backshell options

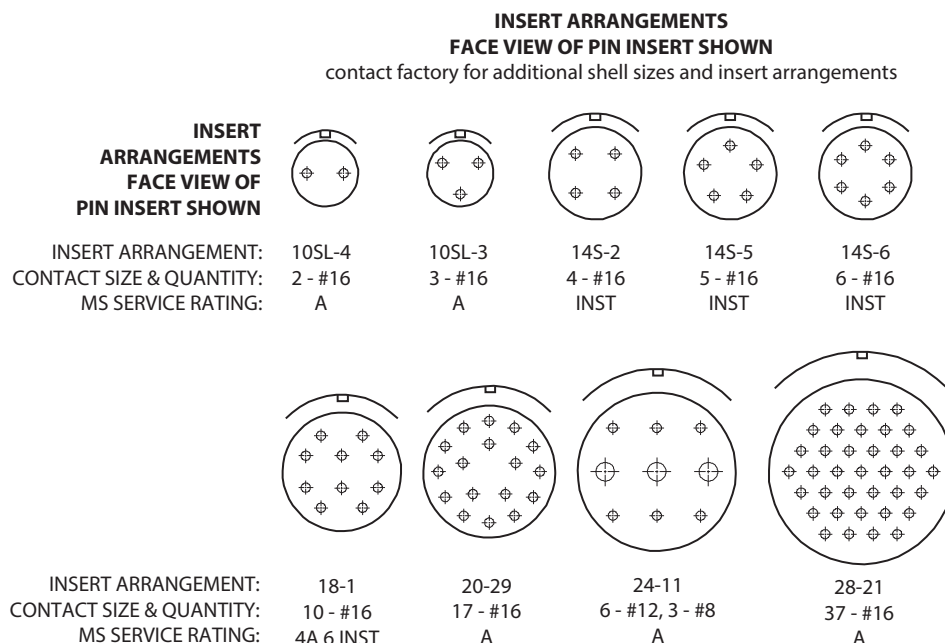


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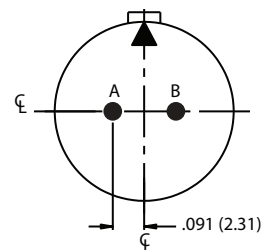
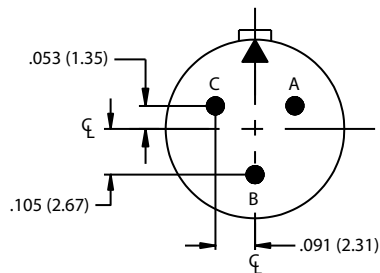
| TABLE I: CONNECTOR DIMENSIONS |                   |            |                           |                       |             |             |
|-------------------------------|-------------------|------------|---------------------------|-----------------------|-------------|-------------|
| SHELL SIZE                    | A THREAD CLASS 2A | B DIA MAX  | C DIA +.010-.000 (+0.3-0) | D +.010-.000 (+0.3-0) | E FLATS     | F REF       |
| 10SL                          | 5/8 -24 UNEF      | 1.03(26.2) | .635(16.1)                | .585(14.9)            | .870(22.1)  | 1.000(25.4) |
| 12                            | 3/4 -20 UNEF      | 1.16(29.5) | .760(19.3)                | .710(18.0)            | .995(25.3)  | 1.125(28.6) |
| 14S                           | 7/8 -20 UNEF      | 1.28(32.5) | .885(22.5)                | .835(21.2)            | 1.120(28.4) | 1.250(31.8) |
| 18                            | 1 1/8 -18 UNEF    | 1.66(42.2) | 1.135(28.8)               | 1.085(27.6)           | 1.495(38.0) | 1.730(43.9) |
| 20                            | 1 1/4 -18 UNEF    | 1.78(45.2) | 1.260(32.0)               | 1.210(30.7)           | 1.620(41.1) | 1.870(47.5) |
| 24                            | 1 1/2 -18 UNEF    | 2.03(51.6) | 1.510(38.4)               | 1.460(37.1)           | 1.870(47.5) | 2.165(55.0) |
| 28                            | 1 3/4 -18 UNEF    | 2.28(57.9) | 1.760(44.7)               | 1.710(43.4)           | 2.120(53.8) | 2.448(62.2) |

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**INSERT ARRANGEMENT: 10SL-3**

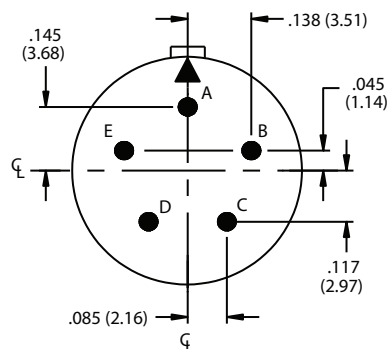
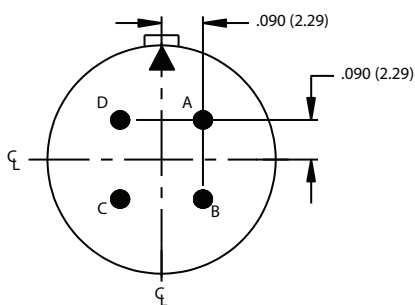
| Contact Position Identification (ID) | Contact Location |               |
|--------------------------------------|------------------|---------------|
|                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | +0.091 (2.31)    | +0.053 (1.35) |
| B                                    | +0.000 (0.00)    | -.105 (2.66)  |
| C                                    | -.091 (2.31)     | +0.053 (1.35) |

| Number of Contacts | Contact Size            | Service Rating | Contact Location |
|--------------------|-------------------------|----------------|------------------|
| 3                  | 16 pin / skt<br>16S skt | A              | all              |

**INSERT ARRANGEMENT: 10SL-4**

| Contact Position Identification (ID) | Contact Location |               |
|--------------------------------------|------------------|---------------|
|                                      | X-Axis (Mm)      | Y-Axis (Mm)   |
| A                                    | -.091 (2.31)     | +0.000 (0.00) |
| B                                    | +0.091 (2.31)    | +0.000 (0.00) |

| Number of Contacts | Contact Size            | Service Rating | Contact Location |
|--------------------|-------------------------|----------------|------------------|
| 2                  | 16 pin / skt<br>16S skt | A              | all              |



**INSERT ARRANGEMENT: 14S-2**

| Contact Position Identification (ID) | Contact Location |               |
|--------------------------------------|------------------|---------------|
|                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | +0.090 (2.29)    | +0.090 (2.29) |
| B                                    | +0.090 (2.29)    | -.090 (2.29)  |
| C                                    | -.090 (2.29)     | -.090 (2.29)  |
| D                                    | -.090 (2.29)     | +0.090 (2.29) |

| Number of Contacts | Contact Size            | Service Rating | Contact Location |
|--------------------|-------------------------|----------------|------------------|
| 4                  | 16 pin / skt<br>16S skt | Inst           | all              |

**INSERT ARRANGEMENT: 14S-5**

| Contact Position Identification (ID) | Contact Location |               |
|--------------------------------------|------------------|---------------|
|                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | +0.000 (0.00)    | +0.145 (3.68) |
| B                                    | +0.138 (3.51)    | +0.045 (1.14) |
| C                                    | +0.085 (2.16)    | -.117 (2.97)  |
| D                                    | -.085 (2.16)     | -.117 (2.97)  |
| E                                    | -.138 (3.51)     | +0.045 (1.14) |

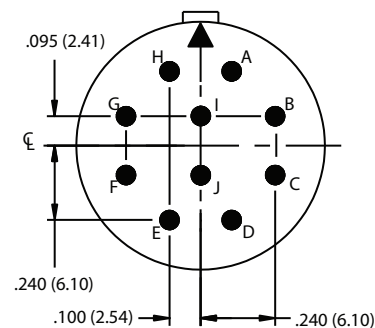
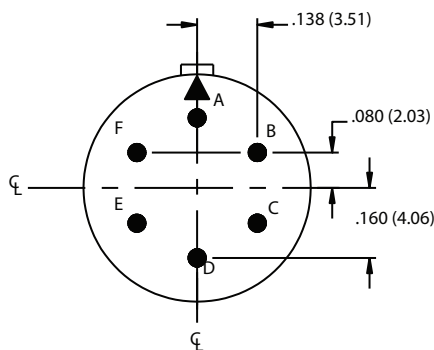
| Number of Contacts | Contact Size            | Service Rating | Contact Location |
|--------------------|-------------------------|----------------|------------------|
| 5                  | 16 pin / skt<br>16S skt | Inst           | all              |

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## INSERT ARRANGEMENT: 14S-6

| Contact Position Identification (ID) | Contact Location |               |
|--------------------------------------|------------------|---------------|
|                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | +0.000 (0.00)    | +0.160 (4.06) |
| B                                    | +0.138 (3.51)    | +0.080 (2.03) |
| C                                    | +0.138 (3.51)    | -0.080 (2.03) |
| D                                    | +0.000 (0.00)    | -0.160 (4.06) |
| E                                    | -0.138 (3.51)    | -0.080 (2.03) |
| F                                    | -0.138 (3.51)    | +0.080 (2.03) |

| Number of Contacts | Contact Size            | Service Rating | Contact Location |
|--------------------|-------------------------|----------------|------------------|
| 6                  | 16 pin / skt<br>16S skt | Inst           | all              |

## INSERT ARRANGEMENT: 18-1

| Contact Position Identification (ID) | Contact Location |               |
|--------------------------------------|------------------|---------------|
|                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | +0.100 (2.54)    | +0.240 (6.10) |
| B                                    | +0.240 (6.10)    | +0.095 (2.41) |
| C                                    | +0.240 (6.10)    | -0.095 (2.41) |
| D                                    | +0.100 (2.54)    | -0.240 (6.10) |
| E                                    | -0.100 (2.54)    | -0.240 (6.10) |
| F                                    | -0.240 (6.10)    | -0.095 (2.41) |
| G                                    | -0.240 (6.10)    | +0.095 (2.41) |
| H                                    | -0.100 (2.54)    | +0.240 (6.10) |
| I                                    | +0.000 (0.00)    | +0.095 (2.41) |
| J                                    | +0.000 (0.00)    | -0.095 (2.41) |

| Number of Contacts | Contact Size | Service Rating | Contact Location |
|--------------------|--------------|----------------|------------------|
| 4                  | 16           | A              | B, C, F, G       |
| 6                  |              | Inst           | All others       |

ENVIRONMENTAL CONNECTORS

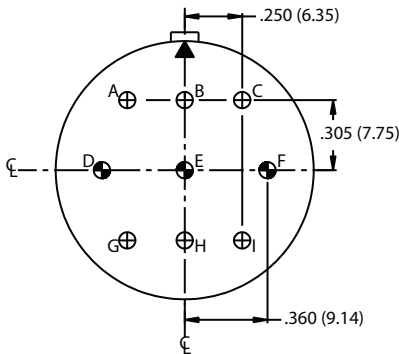
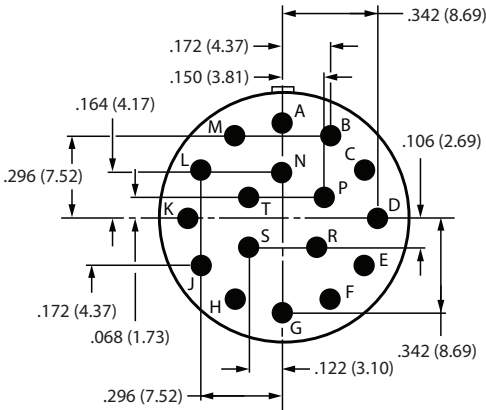
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 MIL STD-1651B PCB Footprints

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| INSERT ARRANGEMENT: 20-29            |                  |               |
|--------------------------------------|------------------|---------------|
| Contact Position Identification (ID) | Contact Location |               |
|                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | +0.000 (0.00)    | +0.342 (8.69) |
| B                                    | +0.172 (4.37)    | +0.296 (7.52) |
| C                                    | +0.296 (7.52)    | +0.172 (4.37) |
| D                                    | +0.342 (8.69)    | +0.000 (0.00) |
| E                                    | +0.296 (7.52)    | -0.172 (4.37) |
| F                                    | +0.172 (4.37)    | -0.296 (7.52) |
| G                                    | +0.000 (0.00)    | -0.342 (8.69) |
| H                                    | -0.172 (4.37)    | -0.296 (7.52) |
| J                                    | -0.296 (7.52)    | -0.172 (4.37) |
| K                                    | -0.342 (8.69)    | +0.000 (0.00) |
| L                                    | -0.296 (7.52)    | +0.172 (4.37) |
| M                                    | -0.172 (4.37)    | +0.296 (7.52) |
| N                                    | +0.000 (0.00)    | +0.164 (4.17) |
| P                                    | +0.150 (3.81)    | +0.068 (1.73) |
| R                                    | +0.122 (3.10)    | -0.106 (2.69) |
| S                                    | -0.122 (3.10)    | -0.106 (2.69) |
| T                                    | -0.150 (3.81)    | +0.068 (1.73) |

| INSERT ARRANGEMENT: 24-11            |                  |               |
|--------------------------------------|------------------|---------------|
| Contact Position Identification (ID) | Contact Location |               |
|                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | -0.250 (6.35)    | +0.305 (7.75) |
| B                                    | +0.000 (0.00)    | +0.305 (7.75) |
| C                                    | +0.250 (6.35)    | +0.305 (7.75) |
| D                                    | -0.360 (9.14)    | +0.000 (0.00) |
| E                                    | +0.000 (0.00)    | +0.000 (0.00) |
| F                                    | +0.360 (9.14)    | +0.000 (0.00) |
| G                                    | -0.250 (6.35)    | -0.305 (7.75) |
| H                                    | +0.000 (0.00)    | -0.305 (7.75) |
| I                                    | +0.250 (6.35)    | -0.305 (7.75) |

| Number of Contacts | Contact Size | Service Rating | Contact Location |
|--------------------|--------------|----------------|------------------|
| 6                  | 12           | A              | All others       |
| 3                  | 18           |                | D, E, F          |

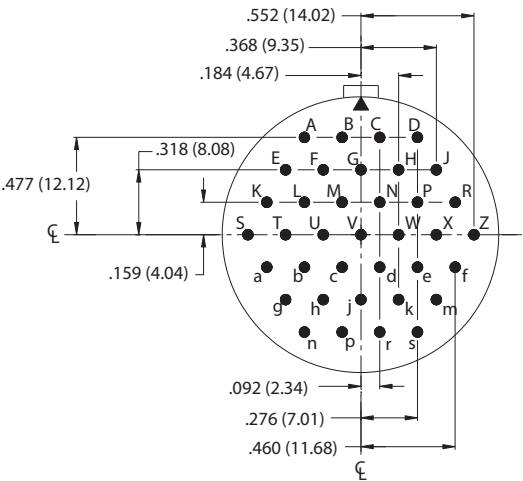
| Number of Contacts | Contact Size | Service Rating | Contact Location |
|--------------------|--------------|----------------|------------------|
| 17                 | 16           | A              | All              |

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MIL STD-1651B PCB Footprints



INSERT ARRANGEMENT: 28-21

| Contact Position Identification (ID) | Contact Location |               | Contact Position Identification (ID) | Contact Location |               |
|--------------------------------------|------------------|---------------|--------------------------------------|------------------|---------------|
|                                      | X-axis (mm)      | Y-axis (mm)   |                                      | X-axis (mm)      | Y-axis (mm)   |
| A                                    | -.276 (7.01)     | +.477 (12.12) | W                                    | +.184 (4.67)     | +.000 (0.00)  |
| B                                    | -.092 (2.34)     | +.477 (12.12) | X                                    | +.368 (9.35)     | +.000 (0.00)  |
| C                                    | +.092 (2.34)     | +.477 (12.12) | Z                                    | +.552 (14.02)    | +.000 (0.00)  |
| D                                    | +.276 (7.01)     | +.477 (12.12) | a                                    | -.460 (11.68)    | -.159 (4.04)  |
| E                                    | -.368 (9.35)     | +.318 (8.08)  | b                                    | -.276 (7.01)     | -.159 (4.04)  |
| F                                    | -.184 (4.67)     | +.318 (8.08)  | c                                    | -.092 (0.00)     | -.159 (4.04)  |
| G                                    | +.000 (0.00)     | +.318 (8.08)  | d                                    | +.092 (0.00)     | -.159 (4.04)  |
| H                                    | +.184 (4.67)     | +.318 (8.08)  | e                                    | +.276 (7.01)     | -.159 (4.04)  |
| J                                    | +.368 (9.35)     | +.318 (8.08)  | f                                    | +.460 (11.68)    | -.159 (4.04)  |
| K                                    | -.460 (11.68)    | +.159 (4.04)  | g                                    | -.368 (9.35)     | -.318 (8.08)  |
| L                                    | -.276 (7.01)     | +.159 (4.04)  | h                                    | -.184 (4.67)     | -.318 (8.08)  |
| M                                    | -.092 (2.34)     | +.159 (4.04)  | j                                    | +.000 (0.00)     | -.318 (8.08)  |
| N                                    | +.092 (2.34)     | +.159 (4.04)  | k                                    | +.184 (4.67)     | -.318 (8.08)  |
| P                                    | +.276 (7.01)     | +.159 (4.04)  | m                                    | +.368 (9.35)     | -.318 (8.08)  |
| R                                    | +.460 (11.68)    | +.159 (4.04)  | n                                    | -.276 (7.01)     | -.477 (12.12) |
| S                                    | -.552 (14.02)    | +.000 (0.00)  | p                                    | -.092 (0.00)     | -.477 (12.12) |
| T                                    | -.368 (9.35)     | +.000 (0.00)  | r                                    | +.092 (0.00)     | -.477 (12.12) |
| U                                    | -.184 (4.67)     | +.000 (0.00)  | s                                    | +.276 (7.01)     | -.477 (12.12) |
| V                                    | +.000 (0.00)     | +.000 (0.00)  |                                      |                  |               |

| Number of Contacts | Contact Size | Service Rating | Contact Location |
|--------------------|--------------|----------------|------------------|
| 37                 | 16           | A              | All              |

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