

## MIL-DTL-38999 Series III Type 2333-2003 Cryogenic Hermetic Receptacle

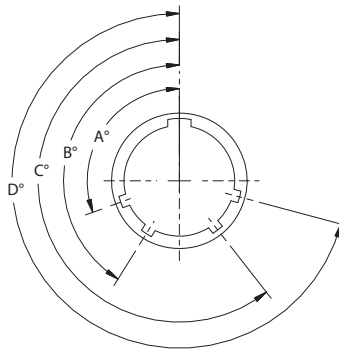
HERMETIC CONNECTORS

| Part Number Development         |   |  |  |  |     |    |      |   |   |
|---------------------------------|---|--|--|--|-----|----|------|---|---|
| Sample Part Number              | 2333-2003   |  |  |  | -H2 | ZL | 9-35 | P | N |
| Series / Basic Part No.         | Cryogenic Hermetic Receptacle   |  |  |  |     |    |      |   |   |
| Connector Style                 | H2 = Box Mount Receptacle<br>H7 = Jam-Nut Mount Receptacle                                |  | H5 = Solder Mount Receptacle<br>H8 = Weld Mount Receptacle |  |     |    |      |   |   |
| Material and Finish*            | ZL = CRES, Nickel Finish    Z1 = CRES, Passivated<br>Z1S = CRES, Passivated (Space Grade) |  |  |  |     |    |      |   |   |
| Shell Size/ Contact Arrangement | Per MIL-DTL-38999/MIL-STD-1560  |  |  |  |     |    |      |   |   |
| Contact Style                   | P = Pin, Solder Cup    C = Pin, Feedthru  |  | X = Pin, Eyelet  |  |     |    |      |   |   |
|                                 | S = Socket, Solder Cup    Z = Socket, Eyelet  |  | D = Socket, Feedthru                                       |  |     |    |      |   |   |
| Polarization                    | A, B, C, D, E (N = Normal)  |  |  |  |     |    |      |   |   |

\*Refer to Section A for complete details, consult factory for additional options  
Modification codes may be added directly to the end of any valid part number

**Material / Finish:**

- Shell - CRES / Passivated or CRES / Nickel Plated Per QQ-N-290.
- Contacts - Nickel Iron Alloy 52 / Gold Plated
- Sockets - Copper Alloy / Gold Plated
- Insulator - Fused Vitreous Glass
  - High Grade Rigid Dielectric
- Seals - Duraelectric K



MASTER KEY & KEYWAYS  
POLARIZATION

| TABLE V: DWV VOLTAGE LEVELS AT SEA LEVEL |                     |
|--|---------------------|
| SERVICE RATING                           | VOLTAGE AC RMS 60HZ |
| M  | 1300 VAC            |
| I  | 1800 VAC            |
| II                                       | 2300 VAC            |
| N  | 1000 VAC            |

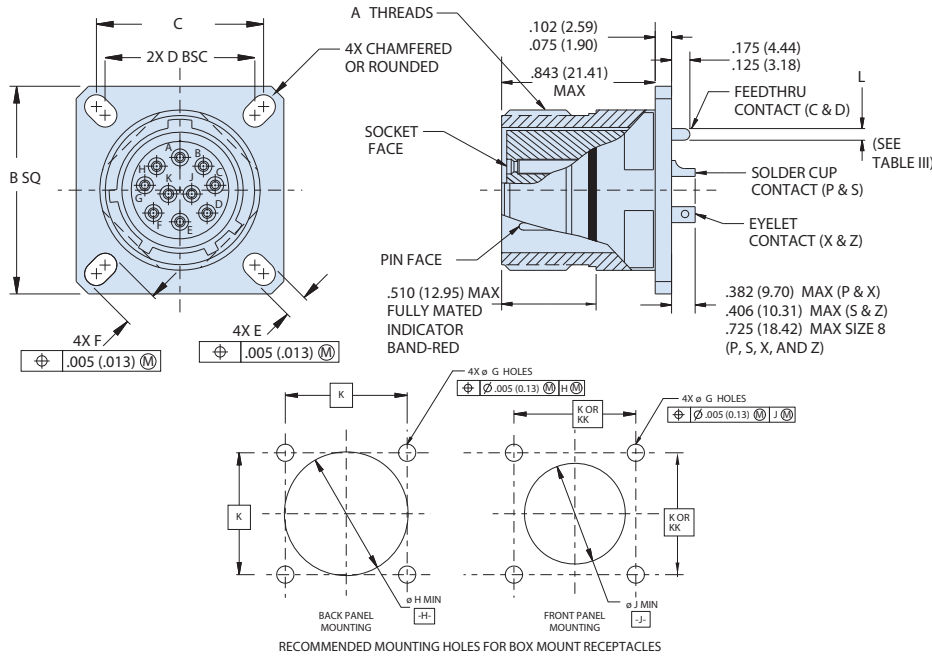
**Notes**

- Operating Temperatures: -195°C To 200°C (-319°F To 392°F)
- Glenair 2333-2003 receptacle connector is designed to mate with any QPL manufacturer's DTL-38999 Series III plug connector having the same shell size, polarization, and arrangement except for shielded contact arrangements. Consult factory for mating plug options.

| Table III: Keyway Positions |     |     |     |     |     |
|-----------------------------|-----|-----|-----|-----|-----|
| SHELL SIZE                  | POS | A°  | B°  | C°  | D°  |
| 9                           | N   | 105 | 140 | 215 | 265 |
|                             | A   | 102 | 132 | 248 | 320 |
|                             | B   | 80  | 118 | 230 | 312 |
|                             | C   | 35  | 140 | 205 | 275 |
|                             | D   | 64  | 155 | 234 | 304 |
| 11<br>13<br>15              | E   | 91  | 131 | 197 | 240 |
|                             | N   | 95  | 141 | 208 | 236 |
|                             | A   | 113 | 156 | 182 | 292 |
|                             | B   | 90  | 145 | 195 | 252 |
|                             | C   | 53  | 156 | 220 | 255 |
| 17<br>19<br>21<br>23<br>25  | D   | 119 | 146 | 176 | 298 |
|                             | E   | 51  | 141 | 184 | 242 |
|                             | N   | 80  | 142 | 196 | 293 |
|                             | A   | 135 | 170 | 200 | 310 |
|                             | B   | 49  | 169 | 200 | 244 |
|                             | C   | 66  | 140 | 200 | 257 |
|                             | D   | 62  | 145 | 180 | 280 |
|                             | E   | 79  | 153 | 197 | 272 |

**MIL-DTL-38999 Series III Type  
2333-2003 Cryogenic Hermetic Receptacle**

**2333-2003-H2 HERMETIC BOX MOUNT RECPTACLE**



| Table III  |               |               |
|--|---------------|---------------|
| <p>FOR #22D AND 20 CONTACTS ONLY (#20 INACTIVE FOR NEW DESIGN)</p> |               |               |
| CONTACT SIZE   | Ø L           |               |
| 22D  | 0.015 (0.38)  | 0.011 (0.28)  |
| 20   | 0.028 (0.71)  | 0.024 (0.61)  |
| 16   | 0.0635 (1.61) | 0.0615 (1.56) |
| 12   | 0.095 (2.41)  | 0.093 (2.36)  |
| 10   | 0.126 (3.20)  | 0.124 (3.15)  |
| 8  | 0.184 (4.67)  | 0.180 (4.57)  |

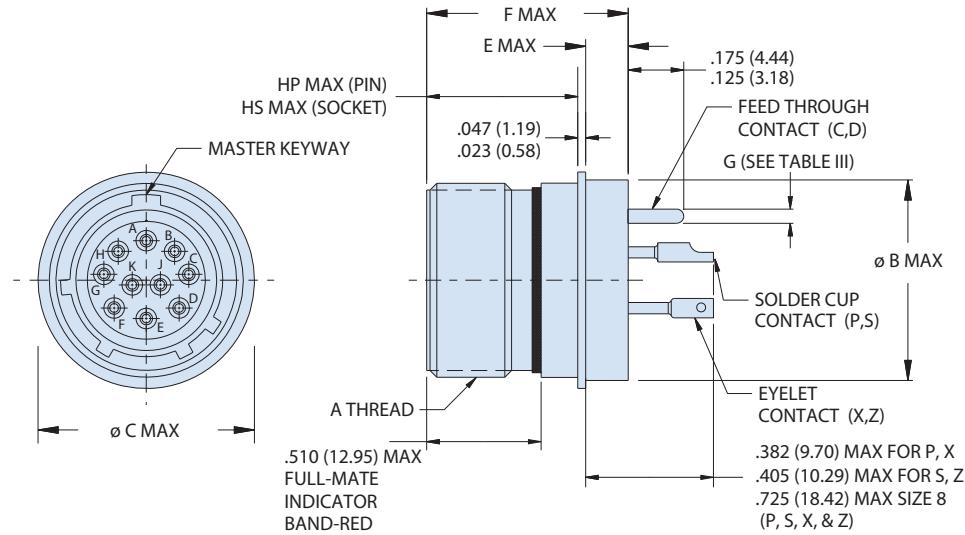
| Dimensions      |            |                     |               |               |               |               |              |              |              |              |
|-----------------|------------|---------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|
| SHELL SIZE CODE | SHELL SIZE | A THREAD            | B SQ          |               | C BSC         | D BSC         | E            |              | F            |              |
| A               | 9          | .6250-1P-.3L-TS-2A  | 0.949 (24.10) | 0.925 (23.50) | 0.719 (18.26) | 0.594 (15.09) | 0.136 (3.45) | 0.120 (3.05) | 0.224 (5.69) | 0.208 (5.28) |
| B               | 11         | .7500-1P-.3L-TS-2A  | 1.043 (26.49) | 1.019 (25.88) | 0.812 (20.62) | 0.719 (18.26) | 0.136 (3.45) | 0.120 (3.05) | 0.202 (5.13) | 0.186 (4.72) |
| C               | 13         | .8750-1P-.3L-TS-2A  | 1.138 (28.91) | 1.114 (28.30) | 0.906 (23.01) | 0.812 (20.62) | 0.136 (3.45) | 0.120 (3.05) | 0.202 (5.13) | 0.186 (4.72) |
| D               | 15         | 1.0000-1P-.3L-TS-2A | 1.232 (31.29) | 1.208 (30.68) | 0.969 (24.61) | 0.906 (23.01) | 0.136 (3.45) | 0.120 (3.05) | 0.181 (4.60) | 0.165 (4.19) |
| E               | 17         | 1.1875-1P-.3L-TS-2A | 1.323 (33.60) | 1.299 (32.99) | 1.062 (26.97) | 0.969 (24.61) | 0.136 (3.45) | 0.120 (3.05) | 0.202 (5.13) | 0.186 (4.72) |
| F               | 19         | 1.2500-1P-.3L-TS-2A | 1.449 (36.80) | 1.425 (36.20) | 1.156 (29.36) | 1.062 (26.97) | 0.136 (3.45) | 0.120 (3.05) | 0.202 (5.13) | 0.186 (4.72) |
| G               | 21         | 1.3750-1P-.3L-TS-2A | 1.575 (40.00) | 1.551 (39.40) | 1.250 (31.75) | 1.156 (29.36) | 0.136 (3.45) | 0.120 (3.05) | 0.202 (5.13) | 0.186 (4.72) |
| H               | 23         | 1.5000-1P-.3L-TS-2A | 1.701 (43.21) | 1.677 (42.60) | 1.375 (34.92) | 1.250 (31.75) | 0.162 (4.11) | 0.146 (3.71) | 0.250 (6.35) | 0.234 (5.94) |
| J               | 25         | 1.6250-1P-.3L-TS-2A | 1.823 (46.30) | 1.799 (45.69) | 1.500 (38.10) | 1.375 (34.92) | 0.162 (4.11) | 0.146 (3.71) | 0.250 (6.35) | 0.234 (5.94) |

| Dimensions      |            |               |               |                              |               |               |
|-----------------|------------|---------------|---------------|------------------------------|---------------|---------------|
| SHELL SIZE CODE | SHELL SIZE | Ø H MIN       | Ø J MIN       | Ø G HOLES                    | K BSC         | KK BSC        |
| A               | 9          | 0.656 (16.66) | 0.516 (13.11) | 0.133 (3.38)<br>0.123 (3.12) | 0.719 (18.26) | 0.594 (15.09) |
| B               | 11         | 0.781 (19.84) | 0.625 (15.88) |                              | 0.812 (20.62) | 0.719 (18.26) |
| C               | 13         | 0.921 (23.39) | 0.750 (19.05) |                              | 0.906 (23.01) | 0.812 (20.62) |
| D               | 15         | 1.047 (26.59) | 0.906 (23.01) |                              | 0.969 (24.61) | 0.906 (23.01) |
| E               | 17         | 1.218 (30.94) | 1.016 (25.81) |                              | 1.062 (26.97) | 0.969 (24.61) |
| F               | 19         | 1.296 (32.92) | 1.142 (29.01) |                              | 1.156 (29.36) | 1.062 (26.97) |
| G               | 21         | 1.421 (36.09) | 1.266 (32.16) |                              | 1.250 (31.75) | 1.156 (29.36) |
| H               | 23         | 1.546 (39.27) | 1.375 (34.92) | 0.159 (4.04)                 | 1.375 (34.92) | 1.250 (31.75) |
| J               | 25         | 1.672 (42.47) | 1.484 (37.69) | 0.149 (3.78)                 | 1.500 (38.10) | 1.375 (34.92) |

**MIL-DTL-38999 Series III Type  
2333-2003 Cryogenic Hermetic Rectacle**

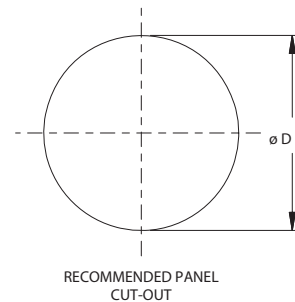
HERMETIC CONNECTORS

**2333-2003-H5 HERMETIC SOLDER MOUNT RECTACLE**



| Table III    |               |               |
|--------------|---------------|---------------|
| CONTACT SIZE | Ø G           |               |
| 22D          | 0.015 (0.38)  | 0.011 (0.28)  |
| 20           | 0.028 (0.71)  | 0.024 (0.61)  |
| 16           | 0.0635 (1.61) | 0.0615 (1.56) |
| 12           | 0.095 (2.41)  | 0.093 (2.36)  |
| 10           | 0.126 (3.20)  | 0.124 (3.15)  |
| 8            | 0.184 (4.67)  | 0.180 (4.57)  |

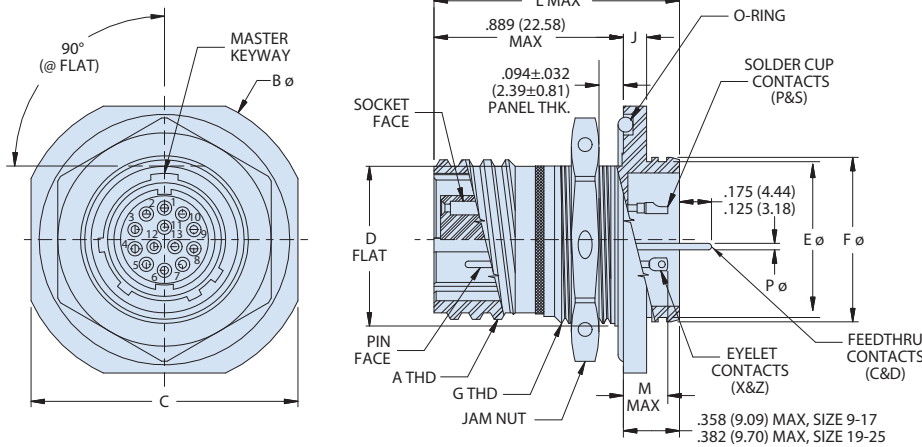
| Dimensions      |            |                     |               |               |                                |              |               |               |               |
|-----------------|------------|---------------------|---------------|---------------|--------------------------------|--------------|---------------|---------------|---------------|
| SHELL SIZE CODE | SHELL SIZE | A THREAD            | Ø B MAX       | Ø C MAX       | Ø D                            | E MAX        | F MAX         | HP MAX        | HS MAX        |
| A               | 9          | .6250-1P-.3L-TS-2A  | 0.673 (17.09) | 0.764 (19.41) | 0.685 (17.40)<br>0.675 (17.15) | 0.201 (5.11) | 0.937 (23.80) | 0.677 (17.20) | 0.764 (19.41) |
| B               | 11         | .7500-1P-.3L-TS-2A  | 0.783 (19.89) | 0.858 (21.79) | 0.794 (20.17)<br>0.784 (19.91) |              |               |               |               |
| C               | 13         | .8750-1P-.3L-TS-2A  | 0.909 (23.09) | 0.980 (24.89) | 0.920 (23.37)<br>0.910 (23.11) |              |               |               |               |
| D               | 15         | 1.0000-1P-.3L-TS-2A | 1.031 (26.19) | 1.106 (28.09) | 1.043 (26.49)<br>1.033 (26.24) |              |               |               |               |
| E               | 17         | 1.1875-1P-.3L-TS-2A | 1.157 (29.39) | 1.232 (31.29) | 1.169 (29.69)<br>1.159 (29.44) |              |               |               |               |
| F               | 19         | 1.2500-1P-.3L-TS-2A | 1.252 (31.80) | 1.323 (33.60) | 1.263 (32.08)<br>1.253 (31.83) |              |               |               |               |
| G               | 21         | 1.3750-1P-.3L-TS-2A | 1.378 (35.00) | 1.449 (36.80) | 1.389 (35.28)<br>1.379 (35.03) | 0.232 (5.89) | 0.969 (24.61) |               |               |
| H               | 23         | 1.5000-1P-.3L-TS-2A | 1.504 (38.20) | 1.575 (40.00) | 1.515 (38.48)<br>1.505 (38.23) |              |               |               |               |
| J               | 25         | 1.6250-1P-.3L-TS-2A | 1.626 (41.30) | 1.701 (43.21) | 1.638 (41.61)<br>1.628 (41.35) |              |               |               |               |



## MIL-DTL-38999 Series III Type 2333-2003 Cryogenic Hermetic Recptacle

HERMETIC CONNECTORS

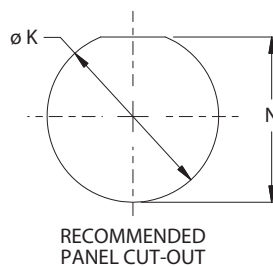
### 2333-2003-H7 HERMETIC JAM-NUT MOUNT RECPTACLE



| Table III    |               |               |
|--------------|---------------|---------------|
|              |               |               |
| CONTACT SIZE | P ø           |               |
| 22D          | 0.015 (0.38)  | 0.011 (0.28)  |
| 20           | 0.028 (0.71)  | 0.024 (0.61)  |
| 16           | 0.0635 (1.61) | 0.0615 (1.56) |
| 12           | 0.095 (2.41)  | 0.093 (2.36)  |
| 10           | 0.126 (3.20)  | 0.124 (3.15)  |
| 8            | 0.184 (4.67)  | 0.180 (4.57)  |

| Dimensions      |            |                           |                                |                |                 |               |                                |                        |              |               |               |              |              |               |                      |  |
|-----------------|------------|---------------------------|--------------------------------|----------------|-----------------|---------------|--------------------------------|------------------------|--------------|---------------|---------------|--------------|--------------|---------------|----------------------|--|
| SHELL SIZE CODE | SHELL SIZE | A THREAD<br>-0.1P-0.3L-TS | ø B                            | C A/F<br>±.015 | D FLAT<br>±.005 | ø E<br>±.012  | ø F                            | G THREAD<br>ISO METRIC | J<br>±.008   | ø K<br>±.005  | L<br>MAX      | M MAX        |              |               | N ±.005<br>(* ±.003) |  |
|                 |            |                           |                                |                |                 |               |                                |                        |              |               |               | P&X          | S&Z          | #8<br>(ALL)   |                      |  |
| A               | 9          | 0.625 (15.88)             | 1.201 (30.51)<br>1.177 (29.90) | 1.063 (27.00)  | 0.650 (16.51)   | 0.602 (15.29) | 0.653 (16.59)<br>0.642 (16.31) | M17 X<br>1.0-6g        | 0.106 (2.69) | 0.698 (17.73) | 1.150 (29.21) | 0.209 (5.31) | 0.232 (5.89) | 0.595 (15.11) | .658*                |  |
| B               | 11         | 0.750 (19.05)             | 1.386 (35.20)<br>1.362 (34.59) | 1.252 (31.80)  | 0.750 (19.05)   | 0.724 (18.39) | 0.775 (19.68)<br>0.764 (19.41) | M20 X<br>1.0-6g        | 0.106 (2.69) | 0.830 (21.08) | 1.150 (29.21) | 0.209 (5.31) | 0.232 (5.89) | 0.595 (15.11) | 0.766 (19.46)        |  |
| C               | 13         | 0.875 (22.23)             | 1.512 (38.40)<br>1.488 (37.80) | 1.374 (34.90)  | 0.937 (23.80)   | 0.850 (21.59) | 0.905 (22.99)<br>0.894 (22.71) | M25 X<br>1.0-6g        | 0.106 (2.69) | 1.015 (25.78) | 1.154 (29.31) | 0.201 (5.11) | 0.224 (5.69) | 0.590 (14.99) | 0.950 (24.13)        |  |
| D               | 15         | 1.000 (25.40)             | 1.638 (41.61)<br>1.614 (41.00) | 1.500 (38.10)  | 1.061 (26.95)   | 0.976 (24.79) | 1.031 (26.19)<br>1.020 (25.91) | M28 X<br>1.0-6g        | 0.106 (2.69) | 1.140 (28.96) | 1.154 (29.31) | 0.201 (5.11) | 0.224 (5.69) | 0.590 (14.99) | 1.080 (27.43)        |  |
| E               | 17         | 1.187 (30.15)             | 1.764 (44.81)<br>1.740 (44.20) | 1.626 (41.30)  | 1.186 (30.12)   | 1.102 (27.99) | 1.153 (29.29)<br>1.142 (29.01) | M32 X<br>1.0-6g        | 0.106 (2.69) | 1.265 (32.13) | 1.154 (29.31) | 0.201 (5.11) | 0.224 (5.69) | 0.590 (14.99) | 1.205 (30.61)        |  |
| F               | 19         | 1.250 (31.75)             | 1.949 (49.50)<br>1.925 (48.90) | 1.811 (46.00)  | 1.311 (33.30)   | 1.228 (31.19) | 1.279 (32.49)<br>1.268 (32.21) | M35 X<br>1.0-6g        | 0.138 (3.51) | 1.390 (35.31) | 1.185 (30.10) | 0.201 (5.11) | 0.224 (5.69) | 0.590 (14.99) | 1.330 (33.78)        |  |
| G               | 21         | 1.375 (34.92)             | 2.075 (52.71)<br>2.051 (52.10) | 1.937 (49.20)  | 1.436 (36.47)   | 1.350 (34.29) | 1.405 (35.69)<br>1.394 (35.41) | M38 X<br>1.0-6g        | 0.138 (3.51) | 1.515 (38.48) | 1.185 (30.10) | 0.201 (5.11) | 0.224 (5.69) | 0.590 (14.99) | 1.455 (36.96)        |  |
| H               | 23         | 1.500 (38.10)             | 2.201 (55.91)<br>2.177 (55.30) | 2.063 (52.40)  | 1.561 (39.65)   | 1.476 (37.49) | 1.531 (38.89)<br>1.520 (38.61) | M41 X<br>1.0-6g        | 0.138 (3.51) | 1.640 (41.66) | 1.185 (30.10) | 0.201 (5.11) | 0.224 (5.69) | 0.590 (14.99) | 1.580 (40.13)        |  |
| J               | 25         | 1.625 (41.28)             | 2.323 (59.00)<br>2.299 (58.39) | 2.189 (55.60)  | 1.686 (42.82)   | 1.602 (40.69) | 1.653 (41.99)<br>1.642 (41.71) | M44 X<br>1.0-6g        | 0.138 (3.51) | 1.765 (44.83) | 1.185 (30.10) | 0.201 (5.11) | 0.224 (5.69) | 0.590 (14.99) | 1.705 (43.31)        |  |

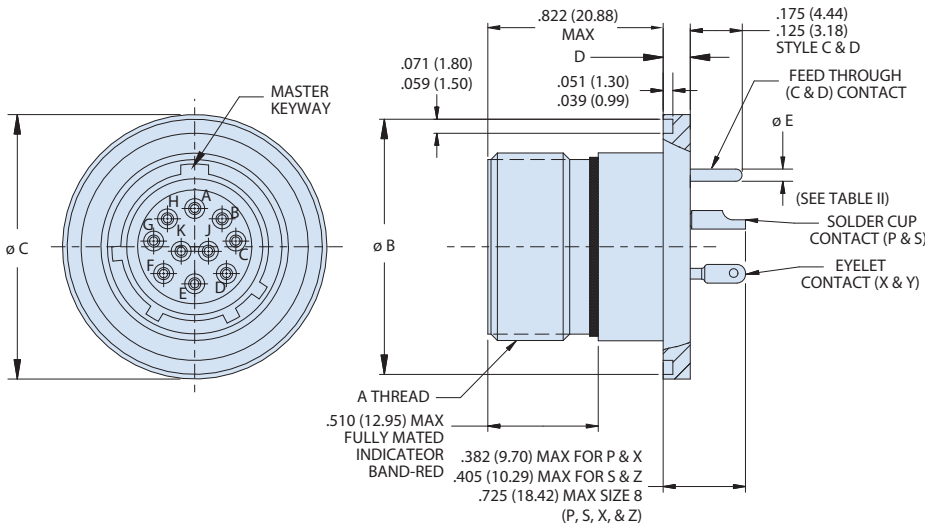
| SOLDER CUPS (P, S) |                         |
|--------------------|-------------------------|
| CONTACT SIZE       | WIRE GAUGE ACCOMODATION |
| 22D                | #22 - #28               |
| 20                 | #20 - #24               |
| 16                 | #16 - #20               |
| 12                 | #12 - #14               |
| 10                 | #10 - #12               |



## MIL-DTL-38999 Series III Type 2333-2003 Cryogenic Hermetic Rectacle

HERMETIC CONNECTORS

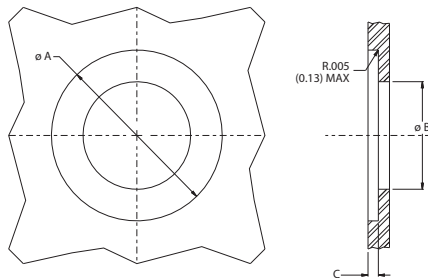
### 2333-2003-H8 HERMETIC WELD MOUNT RECTACLE



**Table III**

FOR #22D AND 20 CONTACTS ONLY  
(#20 INACTIVE FOR NEW DESIGN)

| CONTACT SIZE | ø E           |               |
|--------------|---------------|---------------|
| 22D          | 0.015 (0.38)  | 0.011 (0.28)  |
| 20           | 0.028 (0.71)  | 0.024 (0.61)  |
| 16           | 0.0635 (1.61) | 0.0615 (1.56) |
| 12           | 0.095 (2.41)  | 0.093 (2.36)  |
| 10           | 0.126 (3.20)  | 0.124 (3.15)  |
| 8            | 0.184 (4.67)  | 0.180 (4.57)  |



**Recommended Panel Cutout**

| SHELL SIZE | ø A                       | ø B MIN       | DEPTH C ±.005 |
|------------|---------------------------|---------------|---------------|
| 9          | .990/.985 (25.15/25.02)   | 0.300 (7.62)  | 0.126 (3.20)  |
| 11         | 1.112/1.107 (28.24/28.12) | 0.430 (10.92) | 0.126 (3.20)  |
| 13         | 1.238/1.233 (31.45/28.12) | 0.550 (13.97) | 0.126 (3.20)  |
| 15         | 1.364/1.359 (34.65/34.52) | 0.675 (17.15) | 0.126 (3.20)  |
| 17         | 1.451/1.446 (36.86/36.73) | 0.795 (20.19) | 0.126 (3.20)  |
| 19         | 1.597/1.592 (40.56/40.44) | 0.895 (22.73) | 0.126 (3.20)  |
| 21         | 1.738/1.733 (44.15/44.02) | 1.010 (25.65) | 0.126 (3.20)  |
| 23         | 1.894/1.899 (48.11/48.23) | 1.135 (28.83) | 0.157 (3.99)  |
| 25         | 1.990/1.985 (50.55/50.42) | 1.250 (31.75) | 0.157 (3.99)  |

**Dimensions**

| SHELL SIZE CODE | SHELL SIZE | A THREAD           | ø B                            | ø C                            | D                            |
|-----------------|------------|--------------------|--------------------------------|--------------------------------|------------------------------|
| A               | 9          | .6250-1P-3L-TS-2A  | 0.941 (23.90)<br>0.929 (23.60) | 0.984 (24.99)<br>0.972 (24.69) | 0.134 (3.40)<br>0.118 (3.00) |
| B               | 11         | .7500-1P-3L-TS-2A  | 1.063 (27.00)<br>1.051 (26.70) | 1.106 (28.09)<br>1.094 (27.79) | 0.134 (3.40)<br>0.118 (3.00) |
| C               | 13         | .8750-1P-3L-TS-2A  | 1.189 (30.20)<br>1.177 (29.90) | 1.232 (31.29)<br>1.220 (30.99) | 0.134 (3.40)<br>0.118 (3.00) |
| D               | 15         | 1.0000-1P-3L-TS-2A | 1.315 (33.40)<br>1.303 (33.10) | 1.358 (34.49)<br>1.346 (34.19) | 0.134 (3.40)<br>0.118 (3.00) |
| E               | 17         | 1.1875-1P-3L-TS-2A | 1.402 (35.61)<br>1.390 (35.31) | 1.445 (36.70)<br>1.433 (36.40) | 0.134 (3.40)<br>0.118 (3.00) |
| F               | 19         | 1.2500-1P-3L-TS-2A | 1.547 (39.29)<br>1.535 (38.99) | 1.591 (40.41)<br>1.579 (40.11) | 0.134 (3.40)<br>0.118 (3.00) |
| G               | 21         | 1.3750-1P-3L-TS-2A | 1.689 (42.90)<br>1.677 (42.60) | 1.732 (43.99)<br>1.720 (43.69) | 0.134 (3.40)<br>0.118 (3.00) |
| H               | 23         | 1.5000-1P-3L-TS-2A | 1.854 (47.09)<br>1.842 (46.79) | 1.898 (48.21)<br>1.886 (47.90) | 0.165 (4.19)<br>0.149 (3.78) |
| J               | 25         | 1.6250-1P-3L-TS-2A | 1.941 (49.30)<br>1.929 (49.00) | 1.984 (50.39)<br>1.972 (50.09) | 0.165 (4.19)<br>0.149 (3.78) |