

# MS27477

## Jam Nut Mount Hermetic Receptacle

### MIL-DTL-38999 Series II

#### How To Order: MS

##### Shell Style

**MS27477** - Jam Nut Mount, Series II

##### Connector Material / Finish

**D** - Carbon Steel - Fused Tin Finish  
**E** - Stainless Steel - Passivate Finish  
**N** - Stainless Steel - Nickel Finish

##### Contact Termination

**P** - Pin, Solder Cup      **S** - Socket, Solder Cup  
**X** - Pin, Eyelet        **Z** - Socket, Eyelet  
**C** - Pin, PCB            **D** - Socket, PCB  
                                          Flex Feedthrough      Flex Feedthrough

**Class**  
**Y** - Hermetic

**MS27477**

**Y**

**10**

**N**

**35**

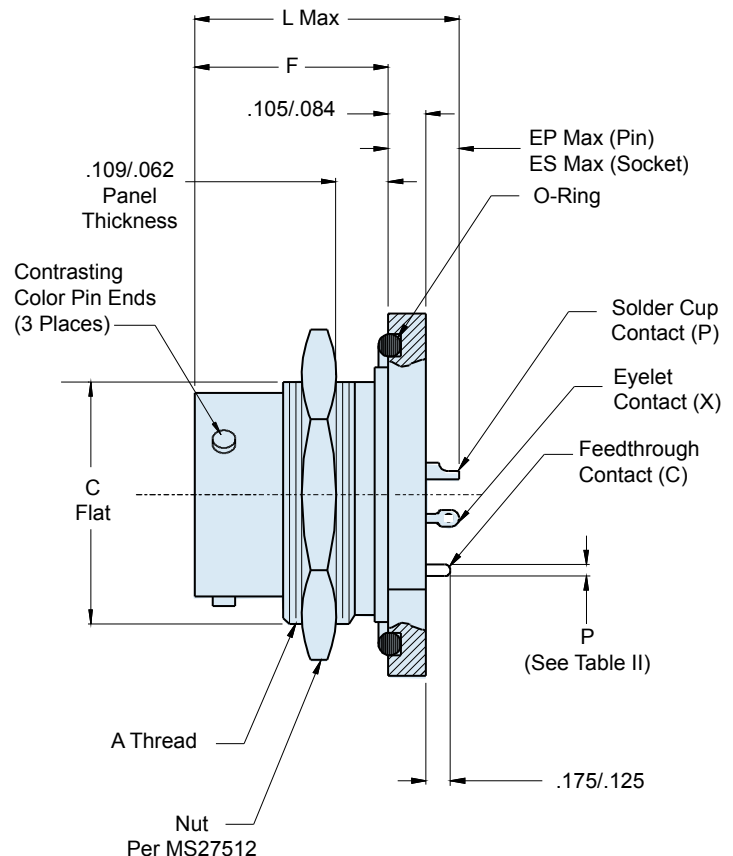
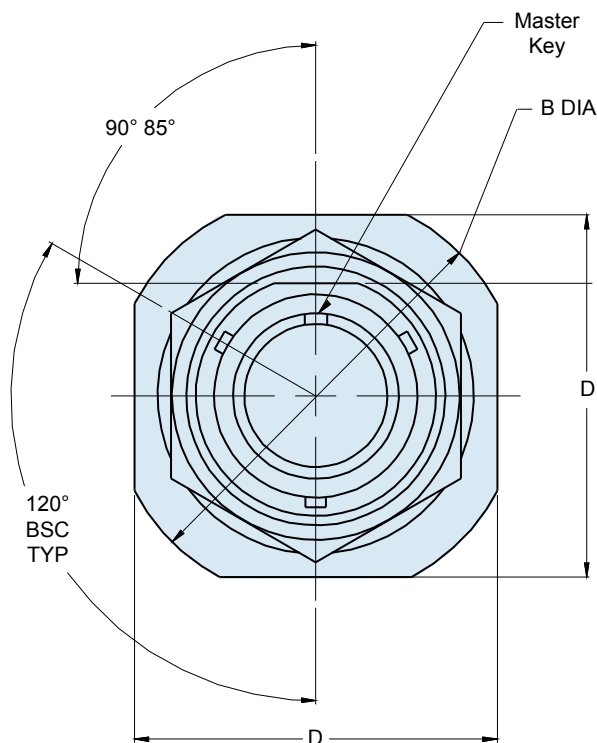
**P**

**A**

**Shell Size**  
 8, 10, 12, 14, 16, 18, 20, 22, 24

**Insert Arrangement**  
 MIL-DTL-38999 Series II  
 Hermetic Inserts Per  
 MIL-STD-1560;  
 See Pages B-2 - B-4

**Alternate Key Position**  
**A, B, C, D**  
*(Omit for Normal)*

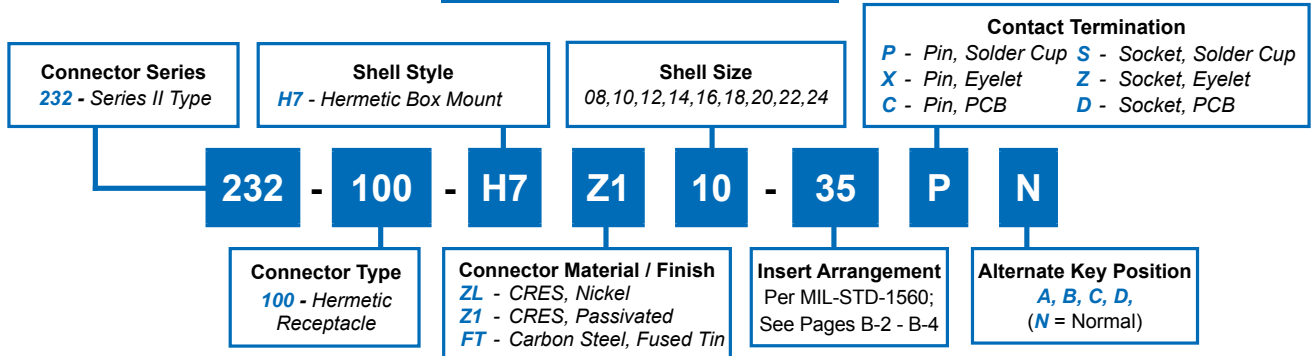


# 232-100-H7 Jam Nut Mount Hermetic Receptacle MIL-DTL-38999 Series II Type



MIL-DTL  
38999 Type

## How To Order: Commercial



B

| WIRE ACCOMODATION |            |
|-------------------|------------|
| Contact Size      | Wire Gauge |
| 22D               | #22 - #28  |
| 20                | #20 - #24  |
| 16                | #16 - #20  |
| 12                | #12 - #14  |

| HERMETIC LEAK RATE MOD CODES |                                              |
|------------------------------|----------------------------------------------|
| Designator                   | Required Leak Rate                           |
| -585A                        | 1 x 10 <sup>-10</sup> cc's Helium per second |
| -585B                        | 1 x 10 <sup>-9</sup> cc's Helium per second  |
| -585C                        | 1 x 10 <sup>-8</sup> cc's Helium per second  |

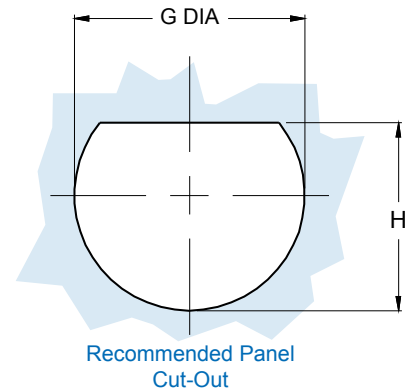


TABLE I: CONNECTOR DIMENSIONS

| SHELL SIZE | A THREAD CLASS 2A | B DIA ±.016(0.4) | C FLAT ±.004(0.1) | D A/F ±.016(0.4) |
|------------|-------------------|------------------|-------------------|------------------|
| 8/08       | .875-20 UNEF      | 1.375(34.9)      | .815(20.7)        | 1.25(31.8)       |
| 10         | 1.000-20 UNEF     | 1.5(38.1)        | .939(23.9)        | 1.375(34.9)      |
| 12         | 1.125-18 UNEF     | 1.625(41.3)      | 1.063(27.0)       | 1.5(38.1)        |
| 14         | 1.250-18 UNEF     | 1.75(44.5)       | 1.188(30.2)       | 1.625(41.3)      |
| 16         | 1.375-18 UNEF     | 1.938(49.2)      | 1.318(33.5)       | 1.781(45.2)      |
| 18         | 1.500-18 UNEF     | 2.016(51.2)      | 1.438(36.5)       | 1.890(48.0)      |
| 20         | 1.625-18 UNEF     | 2.141(54.4)      | 1.563(39.7)       | 2.016(51.2)      |
| 22         | 1.750-18 UNS      | 2.265(57.5)      | 1.688(42.9)       | 2.140(54.4)      |
| 24         | 1.875-16 UN       | 2.39(60.7)       | 1.813(46.1)       | 2.265(57.5)      |

TABLE I (CONTINUED): CONNECTOR DIMENSIONS

| SHELL SIZE | EP MAX     | ES MAX     | F ±.005(0.1) | G DIA ±.005(0.1) | H ±.005(0.1) | L MAX      |
|------------|------------|------------|--------------|------------------|--------------|------------|
| 8/08       | .281 (7.1) | .359 (9.1) | .438(11.1)   | .885(22.48)      | .830(21.08)  | .724(18.4) |
| 10         | .281 (7.1) | .359 (9.1) | .438(11.1)   | 1.010(25.65)     | .955(24.26)  | .724(18.4) |
| 12         | .281 (7.1) | .359 (9.1) | .438(11.1)   | 1.135(28.83)     | 1.085(27.56) | .724(18.4) |
| 14         | .281 (7.1) | .359 (9.1) | .438(11.1)   | 1.260(32.01)     | 1.210(30.73) | .724(18.4) |
| 16         | .281 (7.1) | .359 (9.1) | .438(11.1)   | 1.385(35.18)     | 1.335(33.91) | .724(18.4) |
| 18         | .281 (7.1) | .359 (9.1) | .438(11.1)   | 1.510(38.35)     | 1.460(37.08) | .724(18.4) |
| 20         | .250 (6.4) | .344 (8.7) | .464(11.8)   | 1.635(41.53)     | 1.585(40.26) | .719(18.3) |
| 22         | .250 (6.4) | .344 (8.7) | .464(11.8)   | 1.760(44.70)     | 1.709(43.42) | .719(18.3) |
| 24         | .250 (6.4) | .344 (8.7) | .464(11.8)   | 1.885(47.88)     | 1.835(46.61) | .719(18.3) |

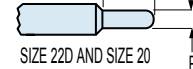
TABLE II: CONTACT SIZE

PRINTED CIRCUIT TAIL CONFIGURATIONS  
CONTACT STYLE C AND D



SIZE 12 AND SIZE 16

.050 ± .015  
(1.27 ± 0.38)



SIZE 22D AND SIZE 20

| Contact Size | ø P                          |
|--------------|------------------------------|
| 22D          | .011 (0.28)<br>.015 (0.38)   |
| 20           | .024 (0.61)<br>.028 (0.71)   |
| 16           | .0635 (1.61)<br>.0615 (1.56) |
| 12           | .095 (2.41)<br>.093 (2.36)   |

## The Full Range of MIL-DTL-38999 Series I, II, III and IV Hermetic Receptacles—*Plus Glenair Commercial Equivalents*

### Product Applications

The MIL-DTL-38999 Series I, II, III and IV family of hermetic connectors are ideal for high-pressure/low-leakage applications in air, sea and space environments. Glenair is on the Qualified Product List (QPL) for all configurations of MIL-DTL-38999 Series I through IV pin and socket hermetic connectors. We also offer our D38999 type commercial part numbers for applications that do not require MS qualified products.

### Materials

Glenair MIL-DTL-38999 Series I, II, III and IV Hermetic Connectors are made of stainless (CRES) or cold rolled steel (CRS), with glass

Nickel-iron alloy 52 gold-plated contacts, available in sizes 8, 10, 12, 16, 20 and 22D, depending on the layout chosen, offer a wide selection of insert arrangement options. Solder cup, feed through (PCB Flexprint) and eyelet contact styles are also available.

### Same-Day Inventory

Because Glenair makes all its hermetic connectors in-house, including the machining of shells, molding of interfacial seals and firing of hermetic components, we can offer you outstanding availability on stock products and fast turnaround on special orders.

*Same-Day Delivery on Most Common Shell Styles and Layouts*

*Full Range of D38999 Series I thru IV Pin and Socket Insert Arrangements*

*DSCC Approved QPL Hermetics*

*1 x 10<sup>-7</sup> cc/Helium per Second Leakage Rate*

*CRES, CRS, Titanium and Inconel® Shells with Vitreous Glass Sealing*

*Jam Nut, Solder Mount, Wall Mount and Box Mount Options*



insulators fused to the connector shell, and contacts meeting a leak rate of 1 X 10<sup>-7</sup> cc/Helium per second. Maximum design flexibility is built into the Series I, II, III and IV Military Standard Hermetic Connectors—with a minimum of 2 to a maximum of 128 circuits per connector in a wide variety of contact arrangements IAW MIL-STD-1560. Fluorosilicone rubber interfacial and peripheral seals ensure positive sealing with plug connectors.

*Catalog contents—including part numbers, materials and dimensions—are accurate to the best of our ability when we go to print. Even so, customers are advised to consult the factory for the latest specifications, particularly to confirm critical dimensions such as connector lengths, threads, and so on. When errors or mistakes are brought to our attention, corrected content is posted immediately on our website, [www.glenair.com](http://www.glenair.com).*



# MIL-DTL-38999 Series I, II, III, and IV Hermetic Class Connectors Insert Arrangements (IAW MIL-STD-1560)

B

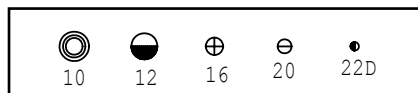
|            |      |      |      |      |      |       |       |       |
|------------|------|------|------|------|------|-------|-------|-------|
|            |      |      |      |      |      |       |       |       |
| Series I   | 9-35 | 9-98 | 11-2 | 11-4 | 11-5 | 11-35 | 11-98 | 11-99 |
| Series II  | 8-35 | 8-98 | 10-2 | 10-4 | 10-5 | 10-35 | 10-98 | 10-99 |
| Series III | A35  | A98  | B2   | B4   | B5   | B35   | B98   | B99   |
| Series IV  | ---  | ---  | ---  | ---  | B5   | B35   | B98   | B99   |

|            |      |      |       |       |
|------------|------|------|-------|-------|
|            |      |      |       |       |
| Series I   | 13-4 | 13-8 | 13-35 | 13-98 |
| Series II  | 12-4 | 12-8 | 12-35 | 12-98 |
| Series III | C4   | C8   | C35   | C98   |
| Series IV  | C4   | ---  | C35   | C98   |

|            |      |       |       |       |       |       |
|------------|------|-------|-------|-------|-------|-------|
|            |      |       |       |       |       |       |
| Series I   | 15-5 | 15-15 | 15-18 | 15-19 | 15-35 | 15-97 |
| Series II  | 14-5 | 14-15 | 14-18 | 14-19 | 14-35 | 14-97 |
| Series III | D5   | D15   | D18   | D19   | D35   | D97   |
| Series IV  | D5   | ---   | D18   | D19   | D35   | D97   |

|            |      |      |       |       |       |
|------------|------|------|-------|-------|-------|
|            |      |      |       |       |       |
| Series I   | 17-6 | 17-8 | 17-26 | 17-35 | 17-99 |
| Series II  | 16-6 | 16-8 | 16-26 | 16-35 | 16-99 |
| Series III | E6   | E8   | E26   | E35   | E99   |
| Series IV  | E6   | E8   | E26   | E35   | ---   |

|            |       |       |       |       |       |       |
|------------|-------|-------|-------|-------|-------|-------|
|            |       |       |       |       |       |       |
| Series I   | 19-11 | 19-28 | 19-30 | 19-32 | 19-35 | 19-45 |
| Series II  | 18-11 | 18-28 | 18-30 | 18-32 | 18-35 | 18-45 |
| Series III | F11   | F28   | F30   | F32   | F35   | F45   |
| Series IV  | F11   | ---   | ---   | F32   | F35   | ---   |

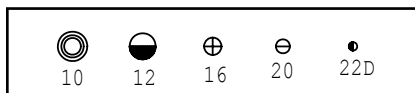




Glennair®

MIL-DTL  
38999

B





# MIL-DTL-38999 Series I, II, III, and IV Hermetic Class Connectors Layouts and Pin Counts

B

| Shell Size and Insert Arrangements |              |                   |                | Number of Pins |    |    |    |
|------------------------------------|--------------|-------------------|----------------|----------------|----|----|----|
| MS Series I                        | MS Series II | D38999 Series III | Service Rating | 22D            | 20 | 16 | 12 |
| 9-35                               | 8-35         | A35               | M              | 6              |    |    |    |
| 9-98                               | 8-98         | A98               | I              |                | 3  |    |    |
| 11-2                               | 10-2         | B2                | I              |                |    | 2  |    |
| 11-4                               | 10-4         | B4                | I              |                | 4  |    |    |
| 11-5                               | 10-5         | B5                | I              |                | 5  |    |    |
| 11-35                              | 10-35        | B35               | M              | 13             |    |    |    |
| 11-98                              | 10-98        | B98               | I              |                | 6  |    |    |
| 11-99                              | 10-99        | B99               | I              |                | 7  |    |    |
| 13-4                               | 12-4         | C4                | I              |                |    | 4  |    |
| 13-8                               | 12-8         | C8                | I              |                | 8  |    |    |
| 13-35                              | 12-35        | C35               | M              | 22             |    |    |    |
| 13-98                              | 12-98        | C98               | I              |                | 10 |    |    |
| 15-5                               | 14-5         | D5                | II             |                |    | 5  |    |
| 15-15                              | 14-15        | D15               | I              |                | 14 | 1  |    |
| 15-18                              | 14-18        | D18               | I              |                | 18 |    |    |
| 15-19                              | 14-19        | D19               | I              |                | 19 |    |    |
| 15-35                              | 14-35        | D35               | M              | 37             |    |    |    |
| 15-97                              | 14-97        | D97               | I              |                | 8  | 4  |    |
| 17-6                               | 16-6         | E6                | I              |                |    |    | 6  |
| 17-8                               | 16-8         | E8                | II             |                |    | 8  |    |
| 17-26                              | 16-26        | E26               | I              |                | 26 |    |    |
| 17-35                              | 16-35        | E35               | M              | 55             |    |    |    |
| 17-99                              | 16-99        | E99               | I              |                | 21 | 2  |    |
| 19-11                              | 18-11        | F11               | II             |                |    | 11 |    |
| 19-28                              | 18-28        | F28               | I              |                | 26 | 2  |    |
| 19-30                              | 18-30        | F30               | I              |                | 29 | 1  |    |
| 19-32                              | 18-32        | F32               | I              |                | 32 |    |    |
| 19-35                              | 18-35        | F35               | M              | 66             |    |    |    |
| 19-45                              | 18-45        | F45               | M              | 67             |    |    |    |
| 21-11                              | 20-11        | G11               | I              |                |    |    | 11 |
| 21-16                              | 20-16        | G16               | II             |                |    | 16 |    |
| 21-24                              | 20-24        | G24               | I              |                | 24 |    |    |
| 21-25                              | 20-25        | G25               | I              |                | 25 |    |    |
| 21-27                              | 20-27        | G27               | I              |                | 27 |    |    |
| 21-35                              | 20-35        | G35               | M              | 79             |    |    |    |
| 21-39                              | 20-39        | G39               | I              |                | 37 | 2  |    |
| 21-41                              | 20-41        | G41               | I              |                | 41 |    |    |
| 23-21                              | 22-21        | H21               | II             |                |    | 21 |    |
| 23-32                              | 22-32        | H32               | I              |                | 32 |    |    |
| 23-34                              | 22-34        | H34               | I              |                | 34 |    |    |
| 23-35                              | 22-35        | H35               | M              | 100            |    |    |    |
| 23-36                              | 22-36        | H36               | I              |                | 36 |    |    |
| 23-53                              | 22-53        | H53               | I              |                | 53 |    |    |
| 23-55                              | 22-55        | H55               | I              |                | 55 |    |    |
| 23-97                              | 22-97        | H97               | I              |                |    | 16 |    |
| 23-99                              | 22-99        | H99               | II             |                |    | 11 |    |
| 25-4                               | 24-4         | J4                | I              |                | 48 | 8  |    |
| 25-19                              | 24-19        | J19               | I              |                |    |    | 19 |
| 25-24                              | 24-24        | J24               | I              |                |    | 12 | 12 |
| 25-29                              | 24-29        | J29               | I              |                |    | 29 |    |
| 25-35                              | 24-35        | J35               | M              | 128            |    |    |    |
| 25-37                              | N/A          | J37               |                |                |    | 37 |    |
| 25-43                              | 24-43        | J43               | I              |                | 23 | 20 |    |
| 25-61                              | 24-61        | J61               | I              |                | 61 |    |    |

| Shell Size / Insert Arrangements | Number of Pins |    |    |    |    |
|----------------------------------|----------------|----|----|----|----|
| D38999 Series IV                 | 22D            | 20 | 16 | 12 | 10 |
| B5                               |                | 5  |    |    |    |
| B35                              | 13             |    |    |    |    |
| B98                              |                | 6  |    |    |    |
| B99                              |                | 7  |    |    |    |
| C4                               |                |    | 4  |    |    |
| C35                              | 22             |    |    |    |    |
| C98                              |                | 10 |    |    |    |
| D5                               |                |    | 5  |    |    |
| D18                              |                | 18 |    |    |    |
| D19                              | 37             | 19 |    |    |    |
| D35                              |                |    |    |    |    |
| D97                              |                | 8  | 4  |    |    |
| E6                               |                |    |    | 6  |    |
| E8                               |                |    | 8  |    |    |
| E26                              |                | 26 |    |    |    |
| E35                              | 55             |    |    |    |    |
| F11                              |                |    | 11 |    |    |
| F32                              |                | 32 |    |    |    |
| F35                              | 66             |    |    |    |    |
| G11                              |                |    |    | 11 |    |
| G16                              |                |    | 16 |    |    |
| G35                              | 79             |    |    |    |    |
| G41                              |                | 41 |    |    |    |
| H21                              |                |    | 21 |    |    |
| H35                              | 100            |    |    |    |    |
| H55                              |                | 55 |    |    |    |
| J4                               |                | 48 | 8  |    |    |
| J11                              |                | 2  |    |    | 9  |
| J19                              |                |    |    | 19 |    |
| J24                              |                |    | 12 | 12 |    |
| J29                              |                |    | 29 |    |    |
| J35                              | 128            |    |    |    |    |
| J37                              |                |    | 37 |    |    |
| J43                              |                | 23 | 20 |    |    |
| J61                              |                | 61 |    |    |    |