



MD801 Series



cinch
CONNECTIVITY SOLUTIONS
a bel group

About Bel

Bel is a publicly traded company that has been operated by the same family for over 65 years. Our history of organic growth and acquisitions have broadened our product portfolio. This has established Bel as a world leader with a diverse offering of power, protection and interconnect products. We design and manufacture these products which are primarily used in the networking, telecommunications, computing, military, aerospace, transportation and broadcasting industries. Bel's portfolio of products also finds application in the automotive, medical and consumer electronics markets.

About Cinch Mil/Aero Circulars

Cinch Mil/Aero Circulars connectors and custom connectors available with hermetic sealing in any circular connector configuration. These glass-sealed packages are used mostly in critical components and assemblies for aerospace use, where leakage must be prevented even under extreme changes in temperature, pressure, and humidity.

Cinch's MD Connectors deliver highly reliable performance equal to MIL-DTL-38999. Key Markets are military, aerospace, and down-hole applications. The MD is offered at a reduced size and weight.

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Dual-Start ACME Thread with PC Tail or Solder Cups

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Dual-Start ACME Thread with Crimp Contacts

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Introduction



The MD 801 Series connector features a Dual-Start ACME thread for protection against cross mating and vibration. Designed for military and aerospace, the shells can be ordered in aluminum or stainless steel, with several options for finishes. The connectors are available as plugs or receptacles with standard crimp or PC Tail contacts, for board mount applications. Available in shell sizes 5 through 13 with multiple insert arrangement configurations.

- Miniature 38999 Plug with Solder or Crimp Contacts
- Miniature 38999 Jam Nut or Box Mount Receptacle with Solder, Crimp or PC Tail Contacts
- Standard or Specialty Platings Available

Features

- Full Performance in Extreme Environments
- Available in Crimp, Solder and PC Tail Terminations
- Shell Styles Include Jam Nut Receptacle, Square Flange Receptacle and In-Line Plugs
- Available in 6, 7, 8, 9, 10, 13 Shell Sizes
- Contact Arrangements Range from 1 to 130 Contacts

| MD Connectors, Tools and Sealing Plugs | | | | | | MD Crimp Tools | |
|--|-----------------|---------------|---------------|---------------|------------------------|---------------------|--------------------------------|
| Contact Size | Wire Size Range | Pin Contacts | Sockets | Sealing Plugs | Insertion Removal Tool | Crimp Tool Mil Spec | Positioner Mil Spec or Daniels |
| 23 | #22-#28 | 806-0060-210 | 857-0060-210 | None | M81969/1-05 | M22520/1-01 | K1461 |
| 20 | #20-#24 | M39029/58-363 | M39029/57-357 | | | M22520/2-01 | M22520/1-04 |
| 16 | #16-#20 | M39029/58-364 | M39029/57-358 | | | M22520/1-01 | M22520/1-04 |
| 12 | #12-#14 | M39029/58-365 | M39029/57-359 | | | M22520/1-01 | M22520/1-04 |

Specifications

| | |
|--|--------------------------------|
| Current Rating | #23-5 A |
| Dielectric Withstanding Voltage | #23-750 VAC |
| Insulation Resistance | 5000 MΩ minimum |
| Operating Temperature | -65° C. to +175° C |
| Shock | 300 g |
| Vibration | 37 g |
| Shielding Effectiveness | 55dB min from 100MHz – 1000MHz |
| Durability | 2000 mating cycles |
| IP Rating | IP67 Mated |

Insert Arrangement

Figure 1



5-3 Arrangement
3 Contacts
#23 Size Contacts



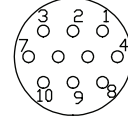
6-4 Arrangement
4 Contacts
#23 Size Contacts



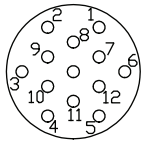
6-6 Arrangement
6 Contacts
#23 Size Contacts



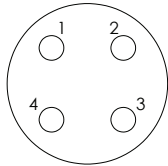
6-7 Arrangement
7 Contacts
#23 Size Contacts



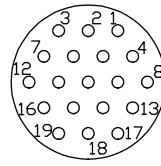
7-10 Arrangement
10 Contacts
#23 Size Contacts



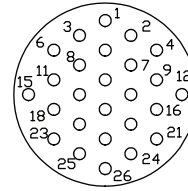
8-13 Arrangement
13 Contacts
#23 Size Contacts



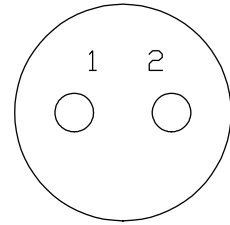
9-4 Arrangement
4 Contacts
#16 Size Contacts



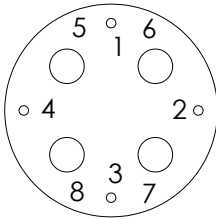
9-19 Arrangement
19 Contacts
#23 Size Contacts



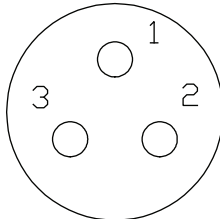
10-26 Arrangement
26 Contacts
#23 Size Contacts



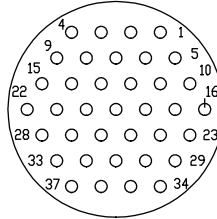
13-2 Arrangement
2 Contacts
#12 Size Contacts



13-205 Arrangement
4-#12 Contacts
4-#23 contacts



13-3 Arrangement
3 Contacts
#12 Size Contacts



13-37 Arrangement
37 Contacts
#23 Size Contacts

Shell Keying

Table 2 - Plug Shell Keying

| Position | A° | B° | C° | D° | E° | F° |
|----------|------|------|------|------|------|------|
| A | 150° | 75° | 95° | 140° | 75° | 95° |
| B | 210° | 210° | 230° | 275° | 275° | 210° |

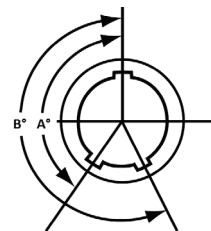
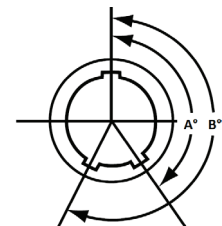
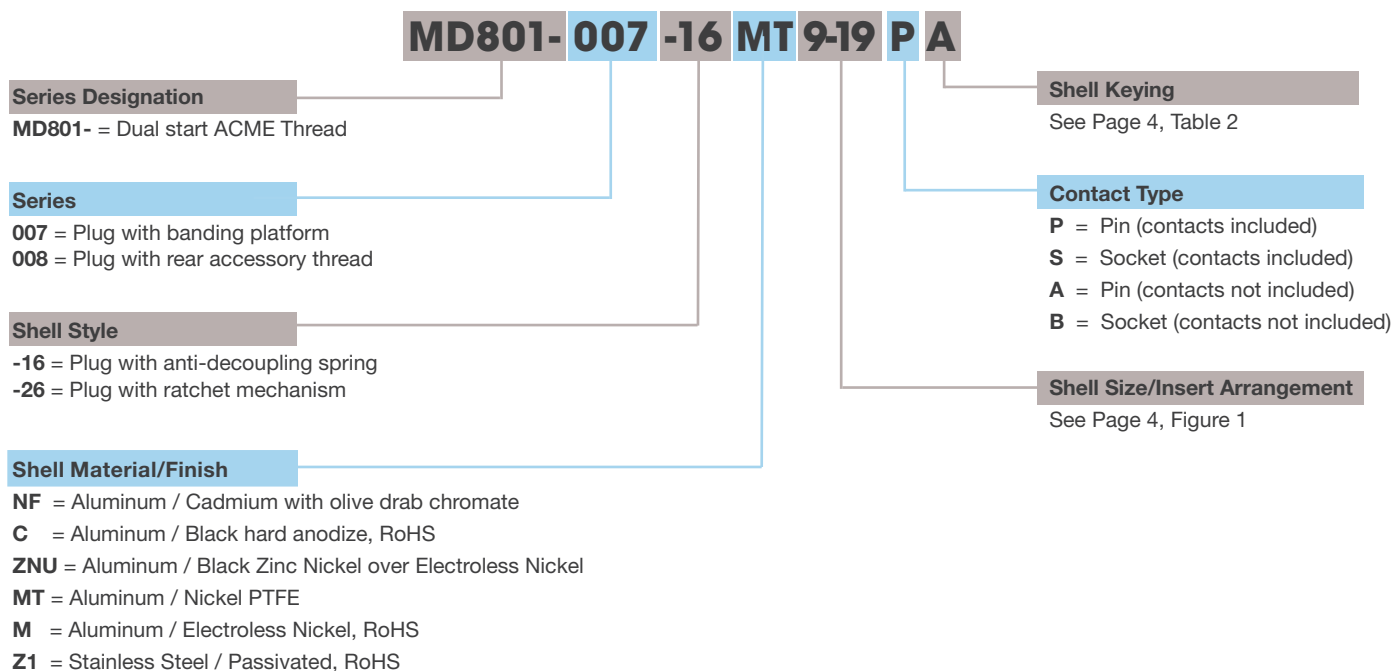


Table 3 - Receptacle Shell Keying

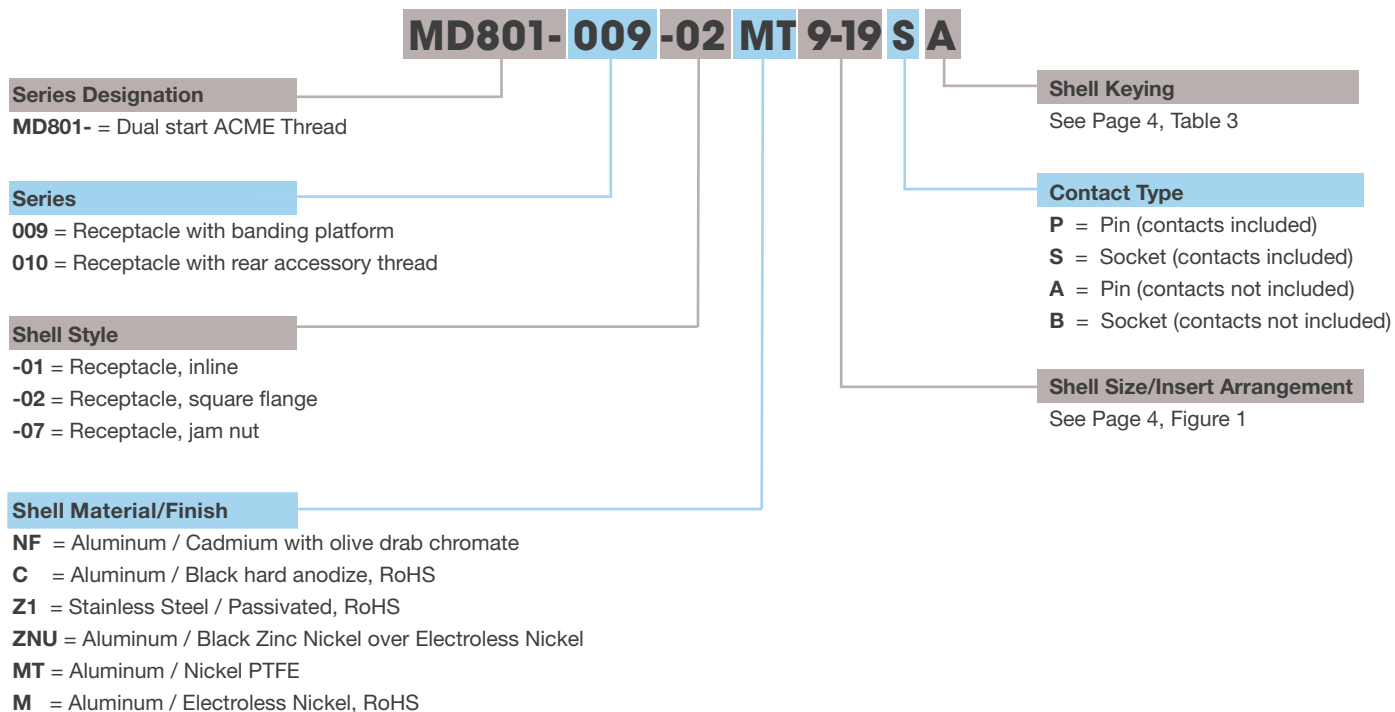
| Position | A° | B° | C° | D° | E° | F° |
|----------|------|------|------|------|------|------|
| A | 150° | 75° | 95° | 140° | 75° | 95° |
| B | 210° | 210° | 230° | 275° | 275° | 210° |



Plug Ordering Information



Receptacle Ordering Information



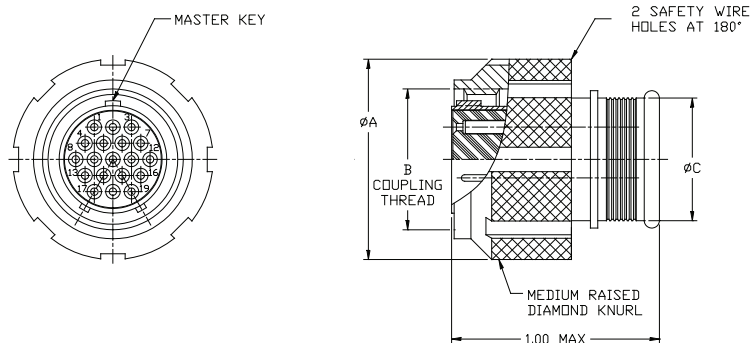
Dual-Start ACME Thread with Crimp Contacts

Plugs



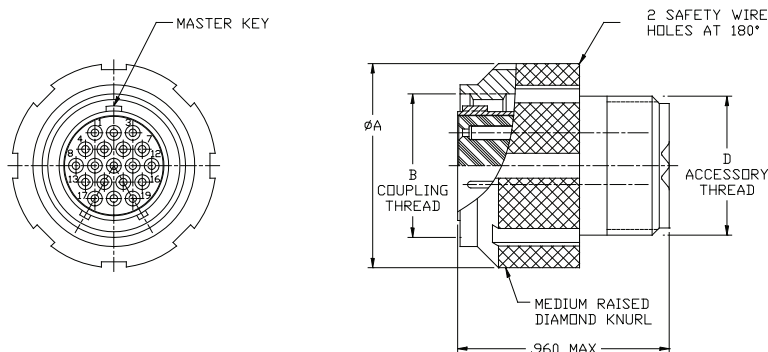
MD801-007, Plug with Banding Platform

MD801-007-XXXXX-XXX



MD801-008, Plug with Rear Accessory Thread

MD801-007-XXXXX-XXX



Dimensions

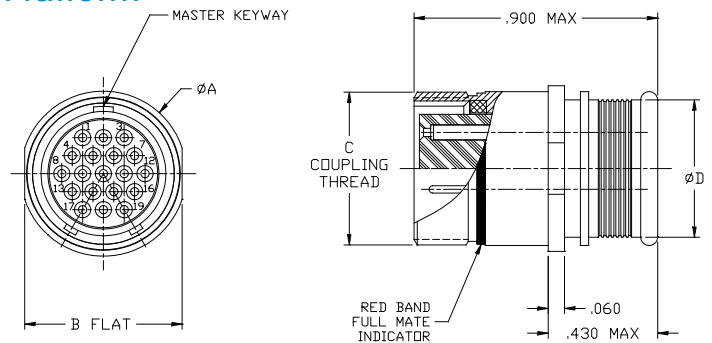
| Shell Size | ϕA | | ϕB | ϕC | D |
|------------|--------------|--------------|-------------------------|---------------|-------------------|
| | Style 16 | Style 26 | Thread | | Thread |
| 5 | 0.54 (13.72) | 0.65 (16.51) | 0.3125-0.05P-0.1L-DS-2B | 0.245 (6.22) | 0.2500-32 UNEF-2A |
| 6 | 0.60 (15.24) | 0.69 (17.53) | 0.3750-0.05P-0.1L-DS-2B | 0.290 (7.37) | 0.3125-32 UNEF-2A |
| 7 | 0.69 (17.53) | 0.79 (20.07) | 0.4375-0.05P-0.1L-DS-2B | 0.390 (9.91) | 0.4375-28 UNEF-2A |
| 8 | 0.75 (19.05) | 0.83 (21.08) | 0.5000-0.05P-0.1L-DS-2B | 0.445 (11.30) | 0.5000-28 UNEF-2A |
| 9 | 0.81 (20.57) | 0.92 (23.37) | 0.5625-0.05P-0.1L-DS-2B | 0.500 (12.70) | 0.5625-24 UNEF-2A |
| 10 | 0.88 (22.35) | 0.98 (24.89) | 0.6250-0.05P-0.1L-DS-2B | 0.560 (14.22) | 0.6250-24 UNEF-2A |
| 13 | 1.05 (26.67) | 1.10 (27.94) | 0.81250-.1P-0.2L-DS-2B | 0.650 (16.51) | 0.6875-24 UNEF-2A |

In-Line Receptacles



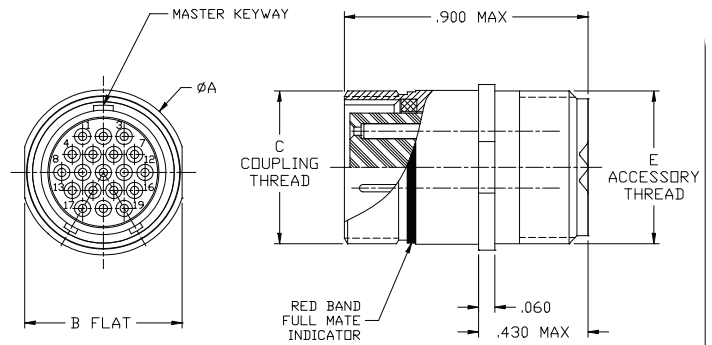
MD801-009, In-Line Receptacle with Banding Platform

MD801-009-01XXX-XXX



MD801-010, In-Line Receptacle with Rear Accessory Thread

MD801-010-01XXX-XXX



Dimensions

| Shell Size | ØA | B Flat | Thread | ØD | E Thread |
|------------|---------------|---------------|-------------------------|---------------|-------------------|
| 5 | 0.355 (9.02) | 0.325 (8.25) | 0.3125-0.05P-0.1L-DS-2B | 0.245 (6.22) | 0.2500-32 UNEF-2A |
| 6 | 0.415 (10.54) | 0.385 (9.78) | 0.3750-0.05P-0.1L-DS-2B | 0.290 (7.37) | 0.3125-32 UNEF-2A |
| 7 | 0.480 (12.19) | 0.445 (11.30) | 0.4375-0.05P-0.1L-DS-2B | 0.390 (9.91) | 0.4375-28 UNEF-2A |
| 8 | 0.540 (13.72) | 0.510 (12.95) | 0.5000-0.05P-0.1L-DS-2B | 0.445 (11.30) | 0.5000-28 UNEF-2A |
| 9 | 0.605 (15.37) | 0.575 (14.60) | 0.5625-0.05P-0.1L-DS-2B | 0.500 (12.70) | 0.5625-24 UNEF-2A |
| 10 | 0.665 (16.89) | 0.635 (16.13) | 0.6250-0.05P-0.1L-DS-2B | 0.560 (14.22) | 0.6250-24 UNEF-2A |
| 13 | 0.855 (21.72) | 0.825 (20.96) | 0.81250-.1P-0.2L-DS-2B | 0.650 (16.51) | 0.6875-24 UNEF-2A |

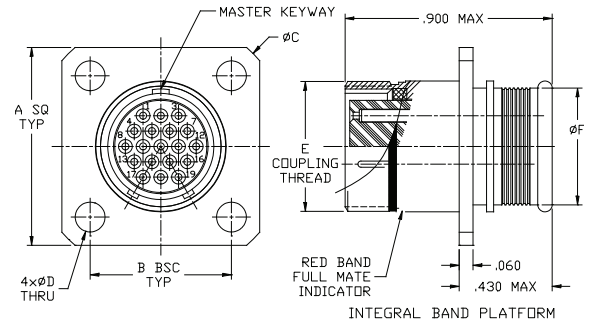
Dual-Start ACME Thread with Crimp Contacts

Square Flange Receptacles



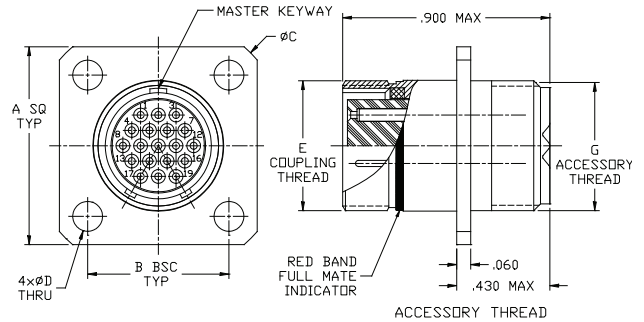
MD801-009, Square Flange Receptacle with Banding Platform

MD801-009-02XXX-XXX



MD801-010, Square Flange Receptacle with Rear Accessory Thread

MD801-010-02XXX-XXX

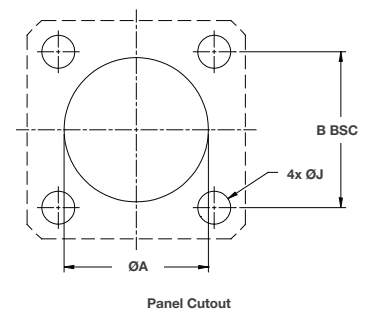


Dimensions

| Shell Size | A | B | ØC | ØD | ØE | E | ØF | G |
|------------|----------------|---------------|---------------|--------------|--------------|-------------------------|---------------|-------------------|
| | SQ | BSC | | | | | | |
| 5 | 0.530 (13.46) | 0.363 (9.22) | 0.680 (17.27) | 0.096 (2.44) | 0.091 (2.31) | 0.3125-0.05P-0.1L-DS-2A | 0.245 (6.22) | 0.2500-32 UNEF-2A |
| 6 | 0.590 (14.99) | 0.423 (10.74) | 0.750 (19.05) | 0.096 (2.44) | 0.091 (2.31) | 0.3750-0.05P-0.1L-DS-2A | 0.290 (7.37) | 0.3125-32 UNEF-2A |
| 7 | 0.6550 (16.51) | 0.483 (12.27) | 0.850 (21.59) | 0.096 (2.44) | 0.091 (2.31) | 0.4375-0.05P-0.1L-DS-2A | 0.390 (9.91) | 0.4375-28 UNEF-2A |
| 8 | 0.712 (18.08) | 0.545 (13.84) | 0.938 (23.83) | 0.096 (2.44) | 0.091 (2.31) | 0.5000-0.05P-0.1L-DS-2A | 0.445 (11.30) | 0.5000-28 UNEF-2A |
| 9 | 0.850 (21.59) | 0.607 (15.42) | 1.125 (28.58) | 0.130 (3.30) | 0.126 (3.20) | 0.525-0.05P-0.1L-DS-2S | 0.500 (12.70) | 0.5625-24 UNEF-2A |
| 10 | 0.890 (22.61) | 0.670 (17.02) | 1.188 (30.18) | 0.130 (3.30) | 0.126 (3.20) | 0.625-0.05P-0.1L-DS-2S | 0.560 (14.22) | 0.625-24 UNEF-2A |
| 13 | 1.030 (26.16) | 0.812 (20.62) | 1.375 (34.92) | 0.130 (3.30) | 0.126 (3.20) | 0.8125-0.1P-0.2L-DS-2A | 0.650 (16.51) | 0.6875-24 UNEF-2A |

Table 4 - Panel Cutout

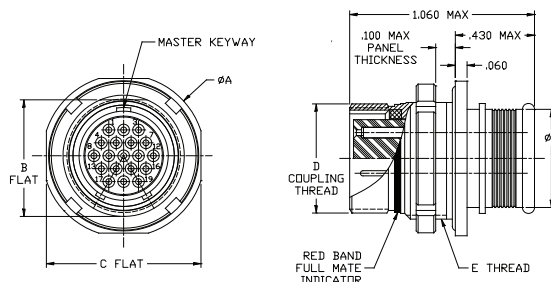
| Shell Size | ØA | B | ØC | |
|------------|---------------|--------------|--------------|--------------|
| | ±0.005 (0.13) | BSC | | |
| 5 | 0.328 (8.33) | 0.328 (8.33) | 0.096 (2.44) | 0.091 (2.31) |
| 6 | 0.390 (8.33) | 0.328 (8.33) | 0.096 (2.44) | 0.091 (2.31) |
| 7 | 0.453 (11.51) | 0.328 (8.33) | 0.096 (2.44) | 0.091 (2.31) |
| 8 | 0.515 (13.08) | 0.328 (8.33) | 0.096 (2.44) | 0.091 (2.31) |
| 9 | 0.57 (14.68) | 0.328 (8.33) | 0.130 (3.30) | 0.126 (3.20) |
| 10 | 0.640 (16.26) | 0.328 (8.33) | 0.130 (3.30) | 0.126 (3.20) |
| 13 | 0.828 (21.03) | 0.328 (8.33) | 0.130 (3.30) | 0.126 (3.20) |



Jam Nut Receptacles

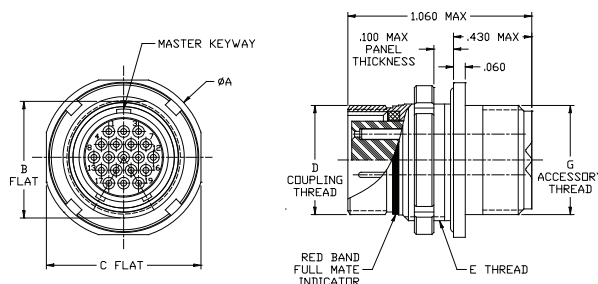
MD801-009, Jam Nut Receptacle with Banding Platform

MD801-009-07XXX-XXX



MD801-010, Jam Nut Receptacle with Rear Accessory Thread

MD801-010-07XXX-XXX

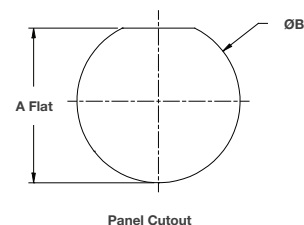


Dimensions

| Shell Size | ØA | B Flat | C Flat | D Thread | E Thread | ØF | G Thread |
|------------|---------------|--------------|---------------|-------------------------|-------------------|---------------|-------------------|
| 5 | 0.54 (13.72) | 0.65 (16.51) | 0.545 (13.84) | 0.3125-0.05P-0.1L-DS-2B | 0.375-28 UNEF-2A | 0.245 (6.22) | 0.250-32 UNEF-2A |
| 6 | 0.635 (16.13) | 0.69 (17.53) | 0.595 (15.11) | 0.3750-0.05P-0.1L-DS-2B | 0.4375-28 UNEF-2A | 0.290 (7.37) | 0.3125-32 UNEF-2A |
| 7 | 0.755 (19.18) | 0.79 (20.07) | 0.73 (18.36) | 0.4375-0.05P-0.1L-DS-2B | 0.5625-32 UNEF-2A | 0.390 (9.91) | 0.4375-28 UNEF-2A |
| 8 | 0.755 (19.18) | 0.83 (21.08) | 0.73 (18.36) | 0.5000-0.05P-0.1L-DS-2B | 0.5625-32 UNEF-2A | 0.445 (11.30) | 0.5000-28 UNEF-2A |
| 9 | 0.830 (21.08) | 0.92 (23.37) | 0.790 (20.07) | 0.5625-0.05P-0.1L-DS-2B | 0.625-28 UNEF-2A | 0.500 (12.70) | 0.5625-24 UNEF-2A |
| 10 | 0.890 (22.61) | 0.98 (24.89) | 0.855 (21.72) | 0.6250-0.05P-0.1L-DS-2B | 0.6875-28 UNEF-2A | 0.560 (14.22) | 0.6250-24 UNEF-2A |
| 13 | 1.078 (27.38) | 1.10 (27.94) | 1.044 (26.52) | 0.81250-.1P-0.2L-DS-2B | 0.875-28 UNEF-2A | 0.650 (16.51) | 0.6875-24 UNEF-2A |

Table 5 - Panel Cutout

| Shell Size | A Flat ±0.002 (0.05) | ØC ±0.002 (0.13) ±0.000 (0.00) |
|------------|-------------------------|--------------------------------------|
| 5 | 0.356 (9.04) | 0.380 (9.65) |
| 6 | 0.416 (10.57) | 0.443 (11.25) |
| 7 | 0.542 (13.77) | 0.567 (14.40) |
| 8 | 0.542 (13.77) | 0.567 (14.40) |
| 9 | 0.602 (15.29) | 0.630 (16.00) |
| 10 | 0.664 (16.87) | 0.693 (17.60) |
| 13 | 0.851 (21.62) | 0.880 (22.35) |



Dual-Start ACME Thread with PC Tails

Receptacle Ordering Information

MD801- 011 -02 MT 9-19 S A

Series Designation

MD801- = Dual start ACME Thread

Series

011 = Receptacle for PC tail or solder cup contacts

033 = Receptacle for PC tail or solder cup contacts, water immersion

Shell Style

-02 = Receptacle, square flange

-07 = Receptacle, jam nut

-12 = Receptacle, square flange, rear panel mount with non-locking clinch nuts

-22 = Receptacle, square flange, rear panel mount with locking clinch nuts

Shell Material/Finish

NF = Aluminum / Cadmium with olive drab chromate

C = Aluminum / Black hard anodize, RoHS

Z1 = Stainless Steel / Passivated, RoHS

ZNU = Aluminum / Black Zinc Nickel over Electroless Nickel

MT = Aluminum / Nickel PTFE

M = Aluminum / Electroless Nickel, RoHS

Shell Keying

See Table 3 (Receptacle)

Contact Type

P = Pin, PC Tail

S = Socket, PC Tail

E = Pin, Solder Cup

F = Socket, Solder Cup

Shell Size/Insert Arrangement

See Page 10, Figure 1

Dimensions

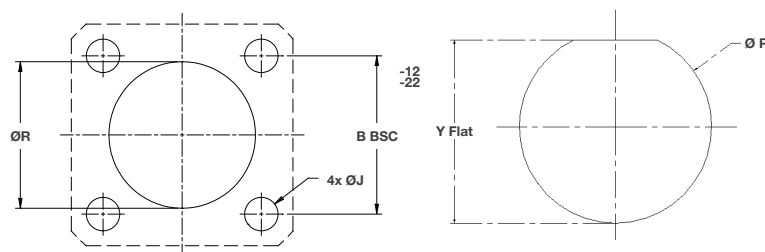
| Shell Size | A Sq | B Bsc | ØC | ØD | E Flat | F Flat | J Holes | K Thread | L Thread | ØM | ØT |
|------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------------------|---------------------|-------------------|---------------|---------------|
| 5 | 0.530 (13.46) | 0.363 (9.22) | 0.680 (17.27) | 0.575 (14.60) | 0.545 (13.84) | 0.350 (8.89) | | 0.3125-0.05P-0.1L2A | 0.375-28 UNEF-2A | 0.244 (6.20) | 0.175 (4.44) |
| 6 | 0.590 (14.99) | 0.423 (1.74) | 0.750 (19.05) | 0.635 (16.13) | 0.595 (15.11) | 0.410 (1.41) | 0.096 (2.44) 0.91 (2.31) | 0.375-0.05P-0.1L2A | 0.4375-28 UNEF-2A | 0.330 (8.38) | 0.238 (6.05) |
| 7 | 0.650 (16.51) | 0.483 (12.27) | 0.850 (21.59) | 0.755 (19.18) | 0.723 (18.36) | 0.536 (13.61) | | 0.4375-0.05P-0.1L2A | 0.5625-32 UNEF-2A | 0.432 (10.97) | 0.327 (8.31) |
| 8 | 0.712 (18.08) | 0.545 (13.84) | 0.938 (23.83) | 0.755 (19.18) | 0.723 (18.36) | 0.536 (13.61) | | 0.5000-0.05P-0.1L2A | 0.5625-32 UNEF-2A | 0.493 (12.52) | 0.388 (9.86) |
| 9 | 0.850 (21.59) | 0.607 (15.42) | 1.125 (28.58) | 0.830 (22.61) | 0.790 (2.07) | 0.506 (15.14) | | 0.5625-0.05p-0.1L2A | 0.6250-28 UNEF-2A | 0.551 (14.00) | 0.446 (11.33) |
| 10 | 0.890 (22.61) | 0.607 (15.42) | 1.188 (3.18) | 0.890 (22.61) | 0.855 (21.72) | 0.658 (16.71) | 0.130 (3.30) 0.126 (3.11) | 0.6250-0.05p-0.1L2A | 0.6875-28 UNEF-2A | 0.620 (15.75) | 0.516 (13.11) |
| 13 | 1.030 (26.16) | 0.812 (2.62) | 1.375 (34.92) | 1.078 (27.38) | 1.044 (26.52) | 0.845 (21.46) | | 0.812-1P-0.2L2A | 0.8750-28 UNEF-2A | 0.703 (17.86) | 0.599 (15.21) |

Dimensions (continued)

| Shell Size | A Flat ±0.002 (0.05) | ØC ±0.002 (0.13) ±0.000 (0.00) | N Flat ±0.002 (0.05) | Ø P +0.005 (+0.13) -0.000 (-0.00) | Ø R ±0.005 (0.13) | Ø U | V Sq | W Clinch Nuts | X |
|------------|-------------------------|--------------------------------------|-------------------------|---|----------------------|---------------|---------------|---------------|--------------|
| 5 | 0.356 (9.04) | 0.380 (9.65) | 0.356 (9.04) | 0.380 (9.65) | 0.328 (8.33) | 0.774 (19.66) | 0.623 (15.82) | | |
| 6 | 0.416 (10.57) | 0.443 (11.25) | 0.416 (10.57) | 0.443 (11.25) | 0.390 (9.91) | 0.860 (21.84) | 0.683 (17.35) | 2-56 | 0.030 (0.76) |
| 7 | 0.542 (13.77) | 0.567 (14.40) | 0.542 (13.77) | 0.567 (14.40) | 0.453 (11.51) | 0.944 (23.98) | 0.743 (18.87) | | |
| 8 | 0.542 (13.77) | 0.567 (14.40) | 0.542 (13.77) | 0.567 (14.40) | 0.515 (13.08) | 1.032 (26.21) | 0.805 (20.45) | | |
| 9 | 0.602 (15.29) | 0.630 (16.00) | 0.602 (15.29) | 0.630 (16.00) | 0.578 (14.68) | 1.180 (29.97) | 0.927 (23.55) | | |
| 10 | 0.664 (16.87) | 0.693 (17.60) | 0.666 (16.92) | 0.693 (17.60) | 0.640 (16.26) | 1.268 (32.21) | 0.990 (25.15) | 4-40 | 0.060 (1.52) |
| 13 | 0.851 (21.62) | 0.880 (22.35) | 0.851 (21.62) | 0.880 (22.35) | 0.828 (21.03) | 1.470 (37.34) | 1.132 (28.75) | | |

Table 6 - PC Tail Diameter

| Contact Size | ØS |
|--------------|---------------|
| #23 | Ø 0.018/0.022 |
| #20 | Ø 0.028/0.024 |
| #16 | Ø 0.060/0.064 |
| #12 | Ø 0.092/0.096 |



Recommended Panel Cutouts

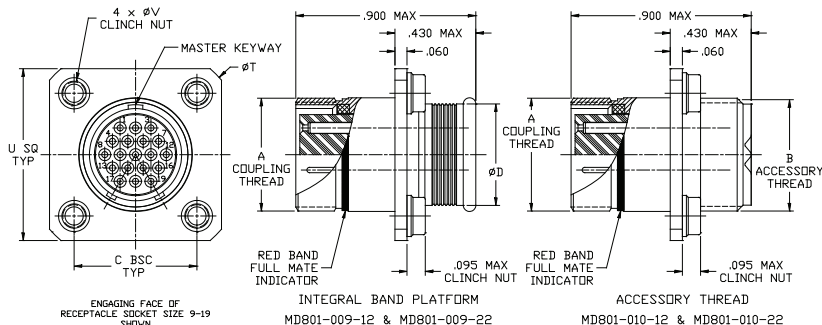
Receptacles



MD801-011-02/MD801-033-02 Square Flange Receptacle

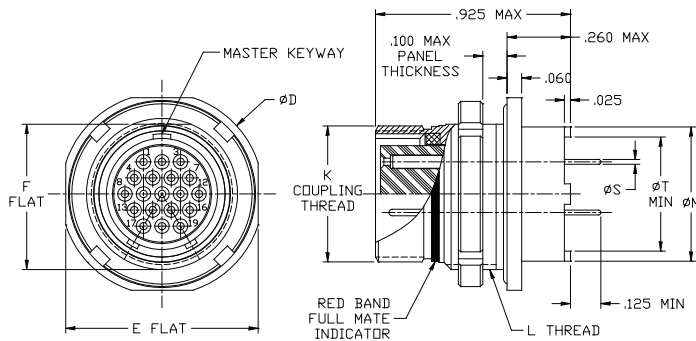
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MD801-033-02XXX-XXX



MD801-011-07/MD801-033-07 Jam Nut Receptacle

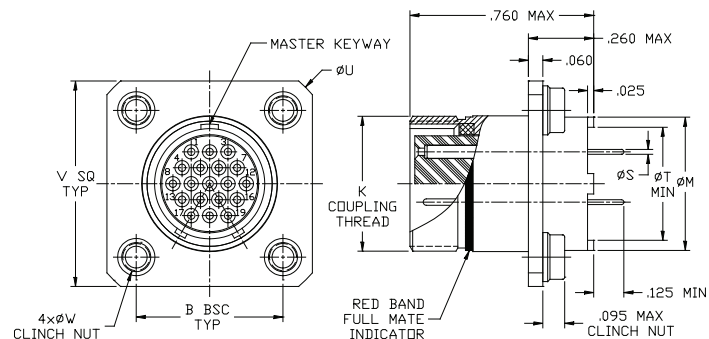
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MD801-011/MD801-033 Square Flange Receptacle

MD801-011-02XXX-12XX

MD801-011-02XXX-22XX

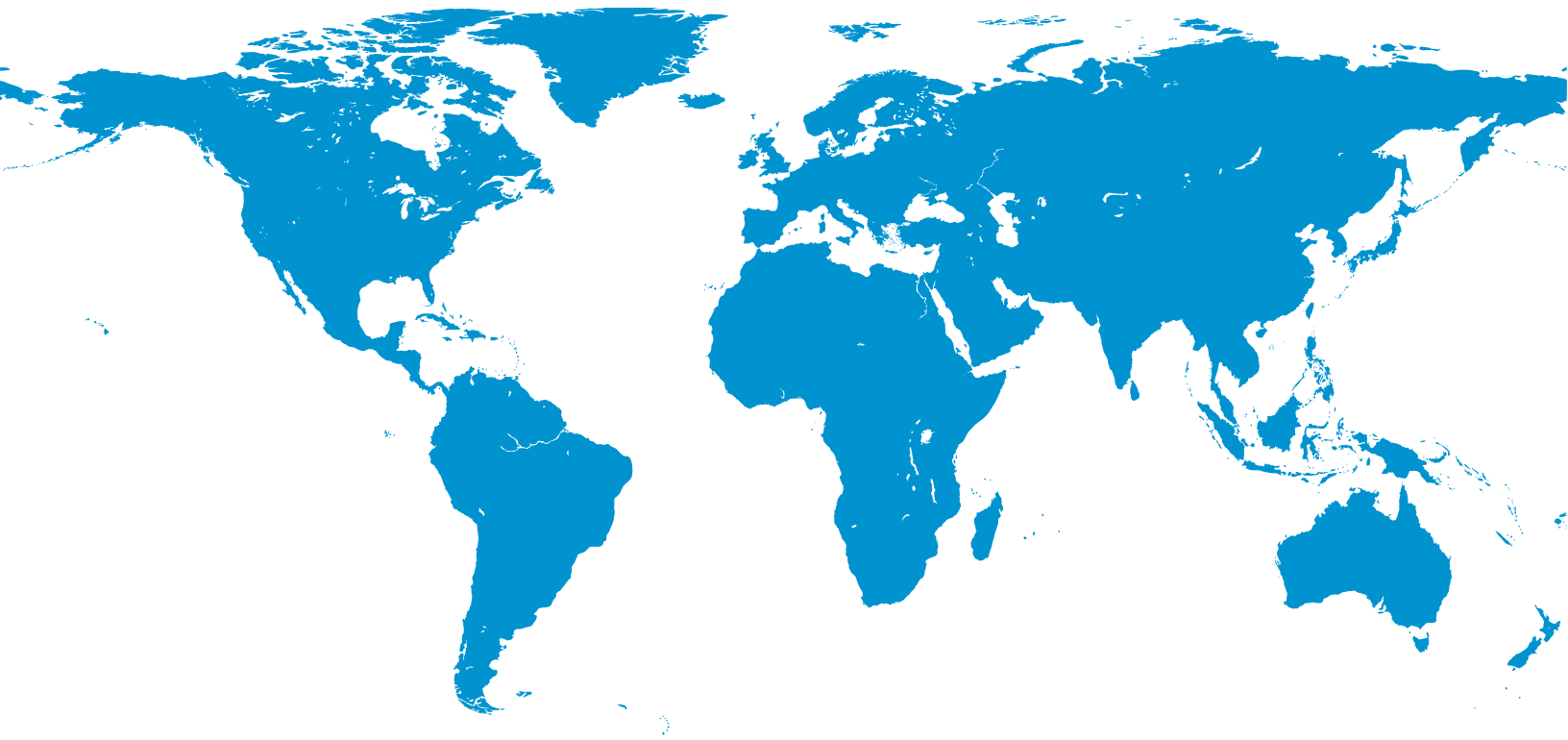




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