



DEUTSCH AFD Series Connectors

Qualified to MIL-DTL-26482 Series II

Miniature Circular Connectors with Quick-Connect Bayonet Coupling and Environmental Sealing to Help Withstand Harsh Environments

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DEUTSCH AFD Series Connectors

Miniature Connectors Sealed To Help Withstand Harsh Environments



WITHSTAND HARSH ENVIRONMENTS

- Triple wire sealed for sealing over a wide range of wire diameters
- Raised moisture barriers around each pin for individual contact sealing

EASY INSTALLATION

- Bayonet coupled
- Closed entry socket insert for positive pin alignment
- Rear-release crimp contact system for superior contact stability

VERSATILE AND ROBUST DESIGN OPTIONS

- Variety of shell styles including square flange, single hole mount, cable connecting, solder mount (hermetic only).
- Aluminum alloy material, nickel, black anodic, and olive drab chromate (cadmium) over nickel platings available
- Power and shielded contacts
- Intermateable with MIL-DTL-26482 Series I connectors

APPLICATIONS

- Commercial Aerospace
- Military Aerospace
- Military Ground Vehicles

TE Connectivity's DEUTSCH AFD series connectors are MIL-DTL-26482 Series II-qualified connectors. They feature bayonet coupling and rear release contacts in a miniature circular connector system with environmental sealing.

This series features four receptacle mounting styles: square flange, wide square flange, cable connecting, and single-hole mount. Plugs are available with and without EMI fingers.

MATERIALS

- **Shell:** Aluminum alloy
- **Shell Plating:** Nickel, black anodized, or olive drab cadmium over nickel base
- **Contacts:** Copper alloy, selectively plated 50 μ m gold
- **Insulator:** Rigid plastic dielectric
- **Seals:** Silicone-based elastomer

ENVIRONMENTAL

- **Temperature:** -55° to 200°C (class W rated to 175°C)
- **Durability:** 500 mating cycles
250 cycles for parts with EMI fingers
- **Vibration:** Meets performance requirements of MIL-DTL-26482
- **Shock:** Meets performance requirements of MIL-DTL-26482

ELECTRICAL

- **Shielding:** EMI spring fingers as per MIL-DTL-26482 Series II
- **Conductivity:** 5 mV max. drop (with EMI Shielding)
200 mV max. drop (except class A) (without EMI Shielding)

| Voltage Rating: | Service Rating 1 | Service Rating II |
|--|---------------------------------|-----------------------------------|
| Recommended Operating Voltage | | |
| @ Sea Level | 600 VAC _{RMS} /850 VDC | 1000 VAC _{RMS} /1275 VDC |
| Test Voltages (V_{RMS}) | | |
| @ Sea Level | 1500 | 2300 |
| @ 50,000 ft. | 500 | 750 |
| @ 70,000 ft. | 375 | 500 |
| @ 110,000 ft. | 200 | 200 |

Contacts

| Size | Pin Contact | Socket Contact | Seal Plug | Insertion/Removal Tool |
|------|--------------|----------------|--------------|------------------------|
| 20 | M39029/4-110 | M39029/5-115 | MS27488-20-2 | M81969/14-11 |
| 16 | M39029/4-111 | M39029/5-116 | MS27488-16-2 | M81969/14-03 |
| 12 | M39029/4-113 | M39029/5-118 | MS27488-12-2 | M81969/14-04 |

| Contact Size | Wire Range (AWG) | Wire Range (mm ²) | Crimp Tool | Test Current (Amps) |
|--------------|------------------|-------------------------------|----------------------------|---------------------|
| 20 | 24-20 | 0.20-0.52 | M22520/1-01 or M22520/2-01 | 7.5 |
| 16 | 20-16 | 0.52-1.31 | M22520/1-01 | 13 |
| 12 | 14-12 | 2.08-3.31 | M22520/1-01 | 23 |

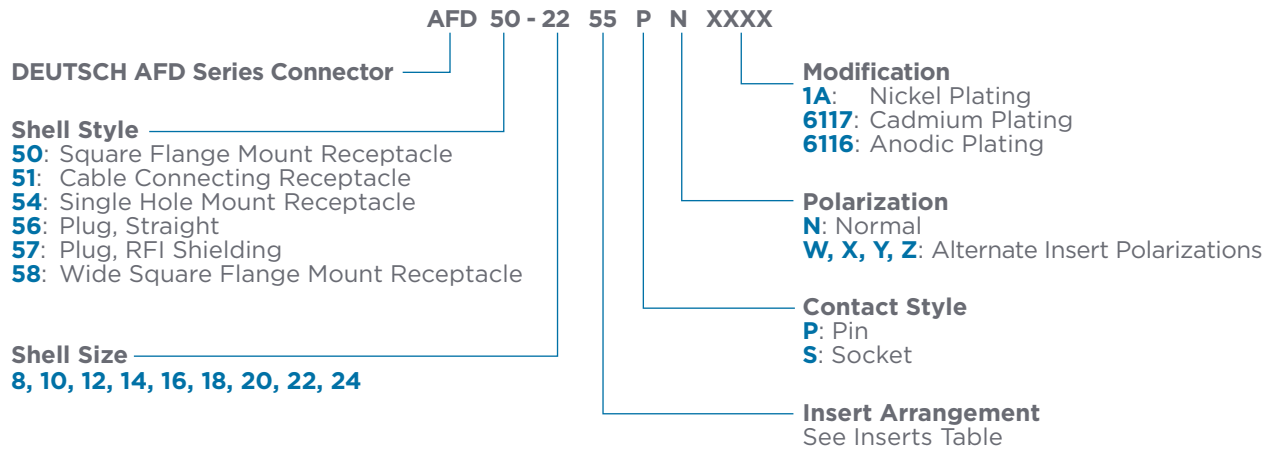
TE Components . . . TE Technology . . . TE Know-how . . .

AMP | AGASTAT | CII | HARTMAN | KILOVAC | MICRODOT | NANONICS | POLAMCO | Raychem | Rochester | DEUTSCH SEACON Phoenix | Phoenix Optix | SEACON

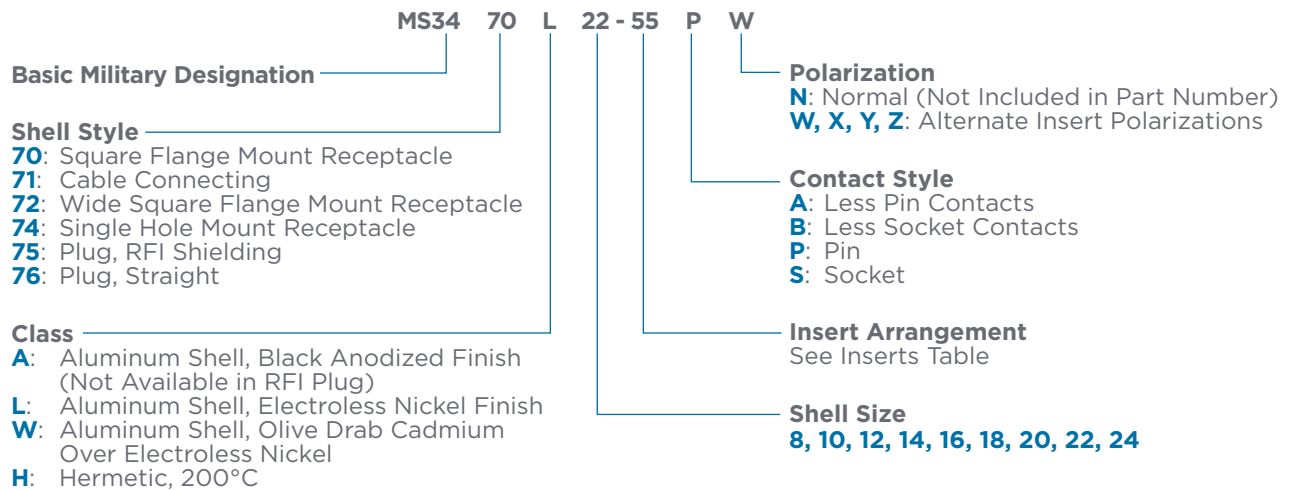
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DEUTSCH AFD Series Part Numbering System



MIL-DTL-26482 Part Numbering System



Insert Arrangements

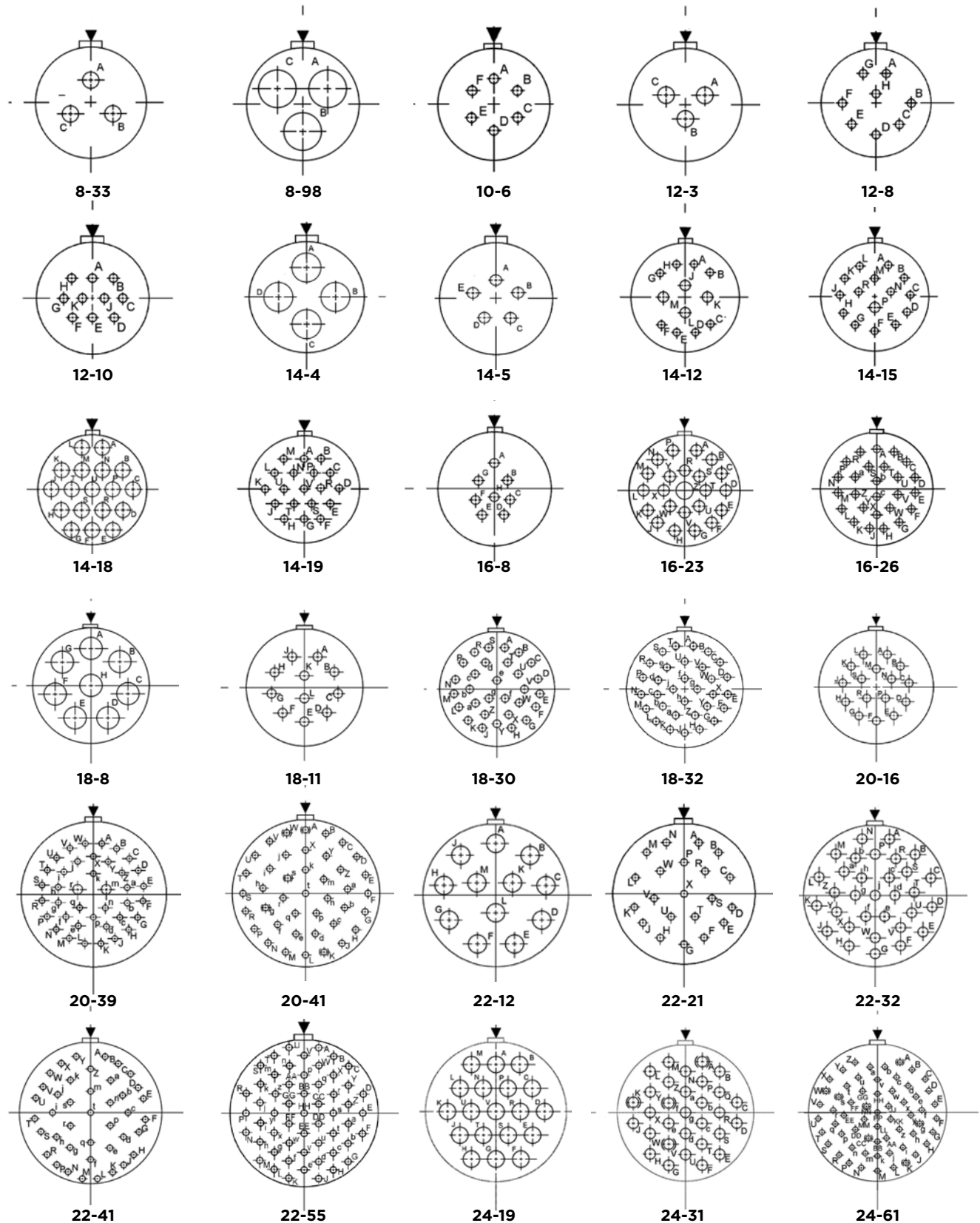
| Insert | Contact Size | | | Insert Positions |
|--------|--------------|----|----|------------------|
| | 20 | 16 | 12 | |
| 8-33 | 3 | — | — | N, W |
| 8-98 | 3 | — | — | N |
| 10-6 | 6 | — | — | N, W |
| 12-3 | — | 3 | — | N, Y |
| 12-8 | 8 | — | — | N, W, X, Y, Z |
| 12-10 | 10 | — | — | N, W, X, Y, Z |
| 14-4 | — | — | 4 | N, W |
| 14-5 | — | 5 | — | N, W, X, Y, Z |
| 14-12 | 8 | 4 | — | N, W, X |
| 14-15 | 14 | 1 | — | N, W, X, Y, Z |

| Insert | Contact Size | | | Insert Positions |
|--------|--------------|----|----|------------------|
| | 20 | 16 | 12 | |
| 14-18 | 18 | — | — | N, W, X, Y, Z |
| 14-19 | 19 | — | — | N, W, X |
| 16-8 | — | 8 | — | N, W, X, Y, Z |
| 16-23 | 22 | 1 | — | N, W |
| 16-26 | 26 | — | — | N, W, Y, Z |
| 18-8 | — | — | 8 | N, W |
| 18-11 | — | 11 | — | N, W, X, Y, Z |
| 18-30 | 29 | 1 | — | N, W, X, Y, Z |
| 18-32 | 32 | — | — | N, W, X, Y, Z |
| 20-16 | — | 16 | — | N, W, X, Y, Z |

| Insert | Contact Size | | | Insert Positions |
|--------|--------------|----|----|------------------|
| | 20 | 16 | 12 | |
| 20-39 | 37 | 2 | — | N, W, X, Y, Z |
| 20-41 | 41 | — | — | N, W, X, Y, |
| 22-12 | — | — | 12 | N |
| 22-21 | — | 21 | — | N, W, X, Y, |
| 22-32 | 32 | — | — | N, W, X, Y, Z |
| 22-41 | 27 | 14 | — | N, W, X, Y, |
| 22-55 | 55 | — | — | N, W, X, Y, Z |
| 24-19 | — | — | 19 | N, W, X, Y, |
| 24-31 | — | 31 | — | N, W, X, Y, |
| 24-61 | 61 | — | — | N, W, X, Y, Z |

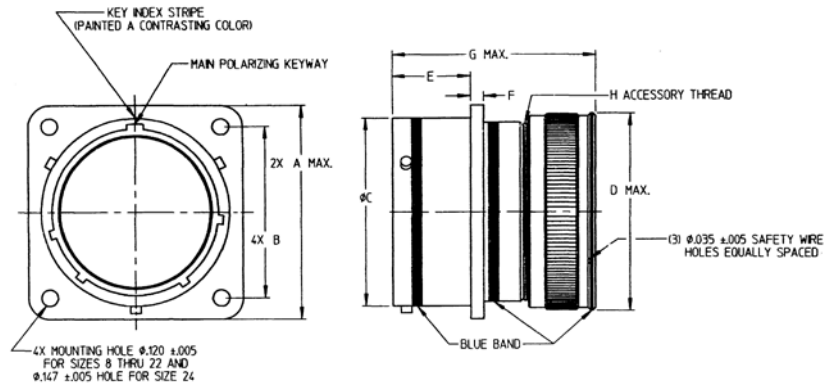


Insert Arrangements





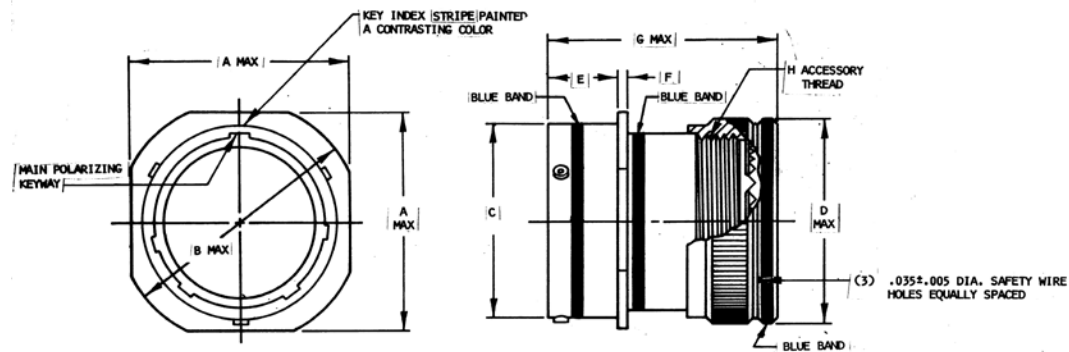
AFD50 & MS3470



AFD50 & MS3470

| Size | A | | B ± .005 | | C ± .000/-0.005 | | D | | E ± .031/-0.000 | | F ± .015 | | G | | H Thread |
|------|-------|--------|----------|--------|-----------------|--------|-------|--------|-----------------|--------|----------|-------|-------|--------|------------------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | |
| 8 | 0.828 | 21.031 | 0.594 | 15.088 | 0.473 | 12.014 | 0.499 | 12.675 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 1/2 - 20 UNF |
| 10 | 0.954 | 24.232 | 0.719 | 18.263 | 0.590 | 14.986 | 0.625 | 15.875 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 5/8 - 24 UNEF |
| 12 | 1.047 | 26.594 | 0.812 | 20.625 | 0.750 | 19.050 | 0.750 | 19.050 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 3/4 - 20 UNEF |
| 14 | 1.141 | 28.981 | 0.906 | 23.012 | 0.875 | 22.225 | 0.875 | 22.225 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 7/8 - 20 UNEF |
| 16 | 1.234 | 31.344 | 0.969 | 24.613 | 1.000 | 25.400 | 1.000 | 25.400 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 1 - 20 UNEF |
| 18 | 1.328 | 33.731 | 1.062 | 26.975 | 1.125 | 28.575 | 1.062 | 26.975 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 1 1/16 - 18 UNEF |
| 20 | 1.453 | 36.906 | 1.156 | 29.362 | 1.250 | 31.750 | 1.187 | 30.150 | 0.556 | 14.122 | 0.094 | 2.388 | 1.275 | 32.385 | 1 3/16 - 18 UNEF |
| 22 | 1.578 | 40.081 | 1.250 | 31.750 | 1.375 | 34.925 | 1.312 | 33.325 | 0.556 | 14.122 | 0.094 | 2.388 | 1.275 | 32.385 | 1 5/16 - 18 UNEF |
| 24 | 1.703 | 43.256 | 1.375 | 34.925 | 1.500 | 38.100 | 1.437 | 36.500 | 0.589 | 14.961 | 0.094 | 2.388 | 1.275 | 32.385 | 1 7/16 - 18 UNEF |

AFD51 & MS3471

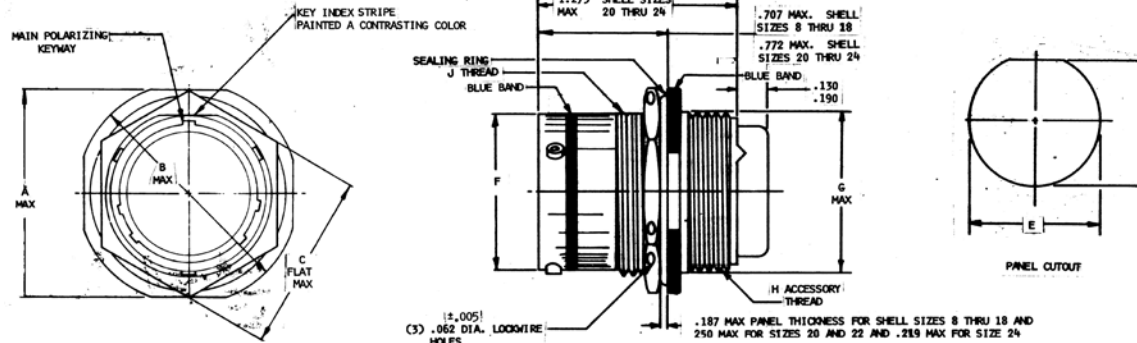


AFD51 & MS3471

| Size | A | | B ± .005 | | C ± .000/-0.005 | | D | | E ± .031/-0.000 | | F ± .015 | | G | | H Thread |
|------|-------|--------|----------|--------|-----------------|--------|-------|--------|-----------------|--------|----------|-------|-------|--------|------------------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | |
| 8 | 0.828 | 21.031 | 0.958 | 24.333 | 0.473 | 12.014 | 0.617 | 15.672 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 1/2 - 20 UNF |
| 10 | 0.954 | 24.232 | 1.082 | 27.483 | 0.590 | 14.986 | 0.734 | 18.644 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 5/8 - 24 UNEF |
| 12 | 1.047 | 26.594 | 1.176 | 29.870 | 0.750 | 19.050 | 0.858 | 21.793 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 3/4 - 20 UNEF |
| 14 | 1.141 | 28.981 | 1.270 | 32.258 | 0.875 | 22.225 | 0.984 | 24.994 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 7/8 - 20 UNEF |
| 16 | 1.234 | 31.344 | 1.364 | 34.646 | 1.000 | 25.400 | 1.112 | 28.245 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 1 - 20 UNEF |
| 18 | 1.328 | 33.731 | 1.458 | 37.033 | 1.125 | 28.575 | 1.218 | 30.937 | 0.431 | 10.947 | 0.062 | 1.575 | 1.215 | 30.861 | 1 1/16 - 18 UNEF |
| 20 | 1.453 | 36.906 | 1.582 | 40.183 | 1.250 | 31.750 | 1.345 | 34.163 | 0.556 | 14.122 | 0.094 | 2.388 | 1.275 | 32.385 | 1 3/16 - 18 UNEF |
| 22 | 1.578 | 40.081 | 1.708 | 43.383 | 1.375 | 34.925 | 1.468 | 37.287 | 0.556 | 14.122 | 0.094 | 2.388 | 1.275 | 32.385 | 1 5/16 - 18 UNEF |
| 24 | 1.703 | 43.256 | 1.832 | 46.533 | 1.500 | 38.100 | 1.593 | 40.462 | 0.589 | 14.961 | 0.094 | 2.388 | 1.275 | 32.385 | 1 7/16 - 18 UNEF |



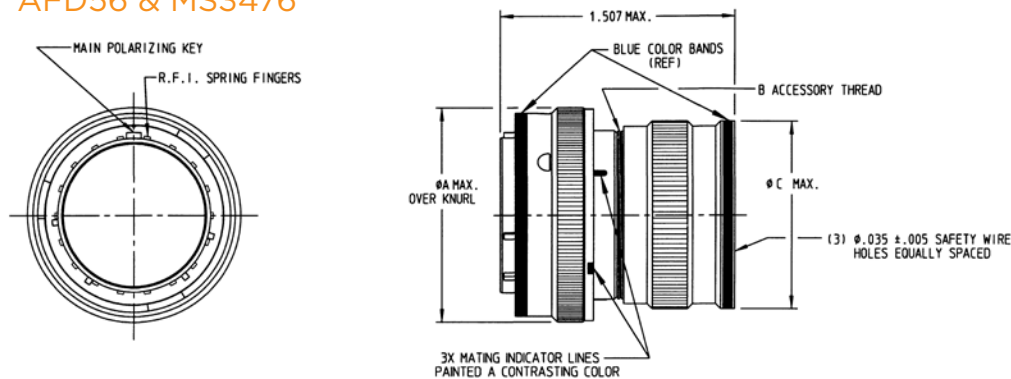
AFD54 & MS3474



AFD54 & MS3474

| Size | A | | B | | C ± .005 | | D ± .005 | | F ± .000/-0.005 | | F ± .015 | | G | | H Thread | J Thread |
|------|-------|--------|-------|--------|----------|--------|----------|--------|-----------------|--------|----------|--------|-------|--------|------------------|-----------------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | | |
| 8 | 0.954 | 24.232 | 1.078 | 27.381 | 0.766 | 19.456 | 0.536 | 13.614 | 0.572 | 14.529 | 0.473 | 12.014 | 0.615 | 15.621 | 1/2 - 20 UNF | 9/16 - 24 UNEF |
| 10 | 1.078 | 27.376 | 1.203 | 30.556 | 0.892 | 22.657 | 0.661 | 16.789 | 0.697 | 17.704 | 0.590 | 14.986 | 0.734 | 18.644 | 5/8 - 24 UNEF | 11/16 - 24 UNEF |
| 12 | 1.266 | 32.156 | 1.391 | 35.331 | 1.079 | 27.407 | 0.824 | 20.930 | 0.895 | 22.733 | 0.750 | 19.050 | 0.858 | 21.793 | 3/4 - 20 UNEF | 7/8 - 20 UNEF |
| 14 | 1.391 | 35.331 | 1.516 | 38.506 | 1.205 | 30.607 | 0.948 | 24.079 | 1.010 | 25.654 | 0.875 | 22.225 | 0.984 | 24.994 | 7/8 - 20 UNEF | 1 - 20 UNEF |
| 16 | 1.516 | 38.506 | 1.641 | 41.681 | 1.329 | 33.757 | 1.072 | 27.229 | 1.135 | 28.829 | 1.000 | 25.400 | 1.112 | 28.245 | 1 - 20 UNEF | 1 1/8 - 18 UNEF |
| 18 | 1.641 | 41.681 | 1.766 | 44.856 | 1.455 | 36.957 | 1.197 | 30.404 | 1.260 | 32.004 | 1.125 | 28.575 | 1.218 | 30.937 | 1 1/16 - 18 UNEF | 1 1/4 - 18 UNEF |
| 20 | 1.828 | 46.431 | 1.954 | 49.632 | 1.579 | 40.107 | 1.322 | 33.579 | 1.384 | 35.154 | 1.250 | 31.750 | 1.345 | 34.163 | 1 3/16 - 18 UNEF | 1 3/8 - 18 UNEF |
| 22 | 1.954 | 49.632 | 2.078 | 52.781 | 1.705 | 43.307 | 1.447 | 36.754 | 1.510 | 38.354 | 1.375 | 34.925 | 1.468 | 37.287 | 1 5/16 - 18 UNEF | 1 1/2 - 18 UNEF |
| 24 | 2.078 | 52.781 | 2.203 | 55.956 | 1.829 | 46.457 | 1.572 | 39.929 | 1.635 | 41.529 | 1.500 | 38.100 | 1.593 | 40.462 | 1 7/16 - 18 UNEF | 1 5/8 - 18 UNEF |

AFD56 & MS3476

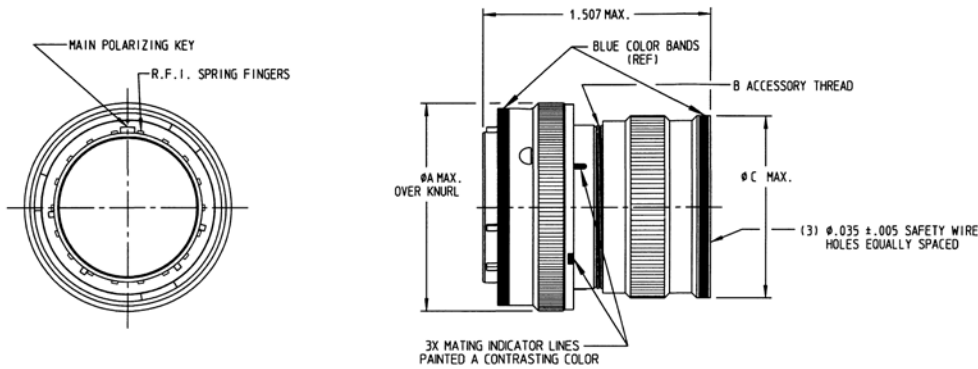


AFD56 & MS3476

| Size | A | | B Thread | C | |
|------|-------|--------|------------------|-------|--------|
| | in | mm | | in | mm |
| 8 | 0.782 | 19.863 | 1/2 - 20 UNF | 0.470 | 11.938 |
| 10 | 0.926 | 23.520 | 5/8 - 24 UNEF | 0.630 | 16.002 |
| 12 | 1.043 | 26.492 | 3/4 - 20 UNEF | 0.724 | 18.390 |
| 14 | 1.183 | 30.048 | 7/8 - 20 UNEF | 0.849 | 21.565 |
| 16 | 1.305 | 33.147 | 1 - 20 UNEF | 0.974 | 24.740 |
| 18 | 1.391 | 35.331 | 1 1/16 - 18 UNEF | 1.030 | 26.162 |
| 20 | 1.531 | 38.887 | 1 3/16 - 18 UNEF | 1.154 | 29.312 |
| 22 | 1.656 | 42.062 | 1 5/16 - 18 UNEF | 1.279 | 32.487 |
| 24 | 1.777 | 45.136 | 1 7/16 - 18 UNEF | 1.404 | 35.662 |



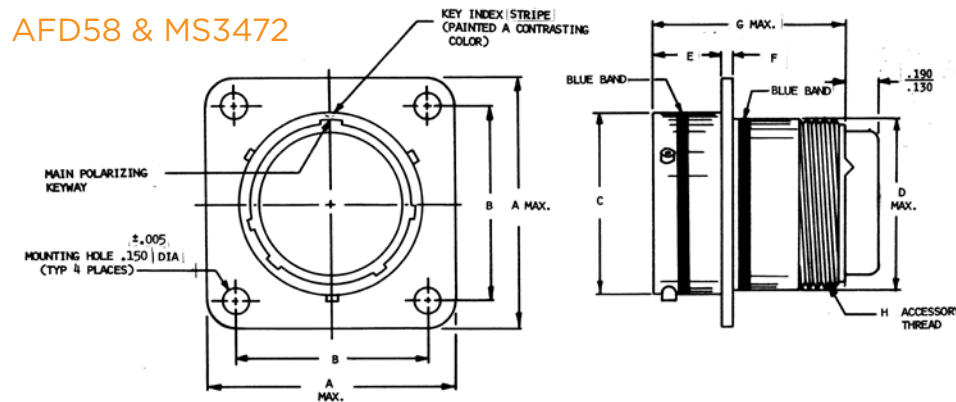
AFD57 & MS3475



AFD57 & MS3475

| Size | A | | B Thread | C | |
|------|-------|--------|------------------|-------|--------|
| | in | mm | | in | mm |
| 8 | 0.782 | 19.863 | 1/2 - 20 UNF | 0.617 | 15.672 |
| 10 | 0.926 | 23.520 | 5/8 - 24 UNEF | 0.734 | 18.644 |
| 12 | 1.043 | 26.492 | 3/4 - 20 UNEF | 0.858 | 21.793 |
| 14 | 1.183 | 30.048 | 7/8 - 20 UNEF | 0.984 | 24.994 |
| 16 | 1.305 | 33.147 | 1 - 20 UNEF | 1.112 | 28.245 |
| 18 | 1.391 | 35.331 | 1 1/16 - 18 UNEF | 1.218 | 30.937 |
| 20 | 1.531 | 38.887 | 1 3/16 - 18 UNEF | 1.345 | 34.163 |
| 22 | 1.656 | 42.062 | 1 5/16 - 18 UNEF | 1.468 | 37.287 |
| 24 | 1.777 | 45.136 | 1 7/16 - 18 UNEF | 1.593 | 40.462 |

AFD58 & MS3472



AFD58 & MS3472

| Size | A | | B ± .005 | | C ± .000/-0.005 | | D | E ± .031/-0.000 | | F ± .015 | | G | H Thread | | |
|------|-------|--------|----------|--------|-----------------|--------|-------|-----------------|-------|----------|-------|-------|----------|--------|------------------|
| | in | mm | in | mm | in | mm | | in | mm | in | mm | | | | |
| 8 | 1.064 | 27.026 | 0.734 | 18.644 | 0.473 | 12.014 | 0.615 | 15.621 | 0.462 | 11.735 | 0.062 | 1.575 | 1.492 | 37.897 | 1/2 - 20 UNF |
| 10 | 1.141 | 28.981 | 0.812 | 20.625 | 0.590 | 14.986 | 0.734 | 18.644 | 0.462 | 11.735 | 0.062 | 1.575 | 1.492 | 37.897 | 5/8 - 24 UNEF |
| 12 | 1.266 | 32.156 | 0.938 | 23.825 | 0.750 | 19.050 | 0.858 | 21.793 | 0.462 | 11.735 | 0.062 | 1.575 | 1.492 | 37.897 | 3/4 - 20 UNEF |
| 14 | 1.360 | 34.544 | 1.031 | 26.187 | 0.875 | 22.225 | 0.984 | 24.994 | 0.462 | 11.735 | 0.062 | 1.575 | 1.492 | 37.897 | 7/8 - 20 UNEF |
| 16 | 1.453 | 36.906 | 1.125 | 28.575 | 1.000 | 25.400 | 1.112 | 28.245 | 0.462 | 11.735 | 0.062 | 1.575 | 1.492 | 37.897 | 1 - 20 UNEF |
| 18 | 1.532 | 38.913 | 1.203 | 30.556 | 1.125 | 28.575 | 1.218 | 30.937 | 0.462 | 11.735 | 0.062 | 1.575 | 1.492 | 37.897 | 1 1/16 - 18 UNEF |
| 20 | 1.688 | 42.875 | 1.297 | 32.944 | 1.250 | 31.750 | 1.345 | 34.163 | 0.556 | 14.122 | 0.094 | 2.388 | 1.552 | 39.421 | 1 3/16 - 18 UNEF |
| 22 | 1.766 | 44.856 | 1.375 | 34.925 | 1.375 | 34.925 | 1.468 | 37.287 | 0.556 | 14.122 | 0.094 | 2.388 | 1.552 | 39.421 | 1 5/16 - 18 UNEF |
| 24 | 1.891 | 48.031 | 1.500 | 38.100 | 1.500 | 38.100 | 1.593 | 40.462 | 0.589 | 14.961 | 0.094 | 2.388 | 1.552 | 39.421 | 1 7/16 - 18 UNEF |

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Consult TE for the latest dimensions and design specifications.

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