

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

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 µin 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 I	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 SEACON | Rochester | DEUTSCH

Empower Engineers to Solve Problems, Moving the World Forward.

DEUTSCH AFD Series Part Numbering System

AFD 50 - 22 55 P N XXXX

DEUTSCH AFD Series Connector

Shell Style
50: Square Flange Mount Receptacle
51: Cable Connecting Receptacle
54: Single Hole Mount Receptacle
56: Plug, Straight
57: Plug, RFI Shielding
58: Wide Square Flange Mount Receptacle

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

Modification
1A: Nickel Plating
6117: Cadmium Plating
6116: Anodic Plating

Polarization
N: Normal
W, X, Y, Z: Alternate Insert Polarizations

Contact Style
P: Pin
S: Socket

Insert Arrangement
See Inserts Table

MIL-DTL-26482 Part Numbering System

MS34 70 L 22 - 55 P W

Basic Military Designation

Shell Style
70: Square Flange Mount Receptacle
71: Cable Connecting
72: Wide Square Flange Mount Receptacle
74: Single Hole Mount Receptacle
75: Plug, RFI Shielding
76: Plug, Straight

Class
A: Aluminum Shell, Black Anodized Finish (Not Available in RFI Plug)
L: Aluminum Shell, Electroless Nickel Finish
W: Aluminum Shell, Olive Drab Cadmium Over Electroless Nickel
H: Hermetic, 200°C

Polarization
N: Normal (Not Included in Part Number)
W, X, Y, Z: Alternate Insert Polarizations

Contact Style
A: Less Pin Contacts
B: Less Socket Contacts
P: Pin
S: Socket

Insert Arrangement
See Inserts Table

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

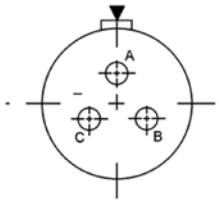
Insert Arrangements

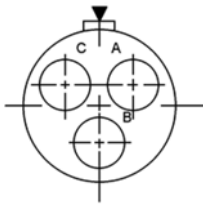
Insert	Contact Size			Insert Positions
	20	16	12	
8-33	3	—	—	N, W
8-98	3	—	—	N
10-6	6	—	—	N, W
12-3	—	3	—	N, Y
12-8	8	—	—	N, W, X, Y, Z
12-10	10	—	—	N, W, X, Y, Z
14-4	—	—	4	N, W
14-5	—	5	—	N, W, X, Y, Z
14-12	8	4	—	N, W, X
14-15	14	1	—	N, W, X, Y, Z

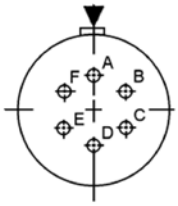
Insert	Contact Size			Insert Positions
	20	16	12	
14-18	18	—	—	N, W, X, Y, Z
14-19	19	—	—	N, W, X
16-8	—	8	—	N, W, X, Y, Z
16-23	22	1	—	N, W
16-26	26	—	—	N, W, Y, Z
18-8	—	—	8	N, W
18-11	—	11	—	N, W, X, Y, Z
18-30	29	1	—	N, W, X, Y, Z
18-32	32	—	—	N, W, X, Y, Z
20-16	—	16	—	N, W, X, Y, Z

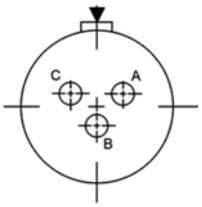
Insert	Contact Size			Insert Positions
	20	16	12	
20-39	37	2	—	N, W, X, Y, Z
20-41	41	—	—	N, W, X, Y,
22-12	—	—	12	N
22-21	—	21	—	N, W, X, Y,
22-32	32	--	—	N, W, X, Y, Z
22-41	27	14	—	N, W, X, Y,
22-55	55	—	—	N, W, X, Y, Z
24-19	—	—	19	N, W, X, Y,
24-31	—	31	—	N, W, X, Y,
24-61	61	—	—	N, W, X, Y, Z

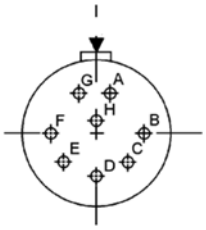
Insert Arrangements

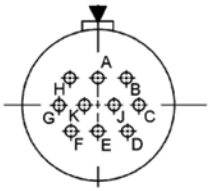

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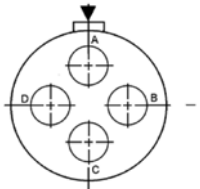

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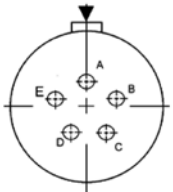

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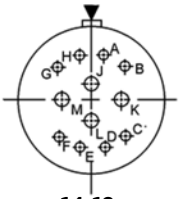

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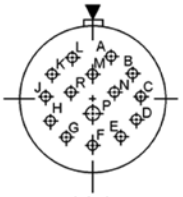

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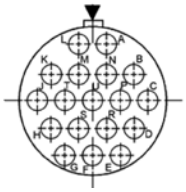

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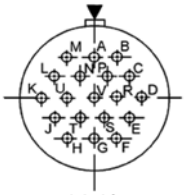

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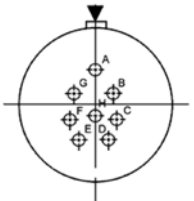

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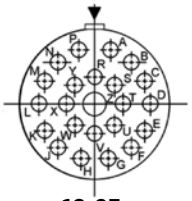

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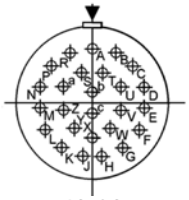

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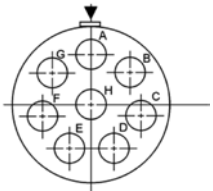

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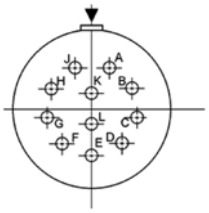

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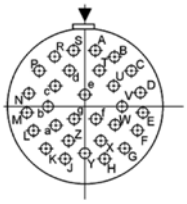

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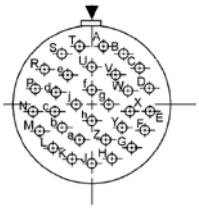

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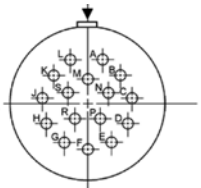

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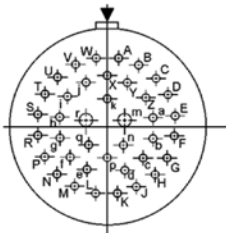

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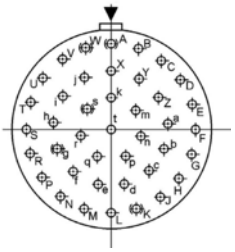

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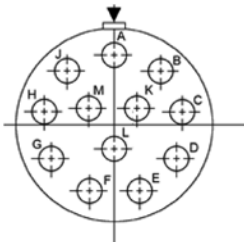

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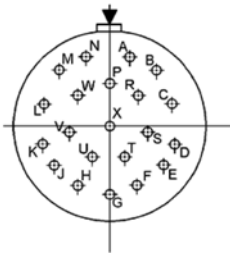

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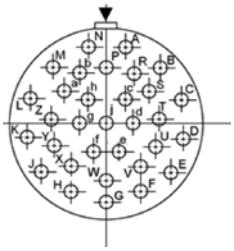

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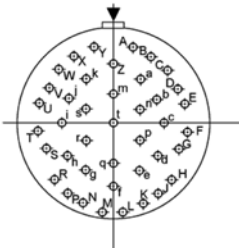

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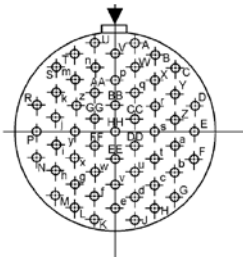

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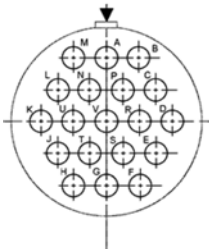

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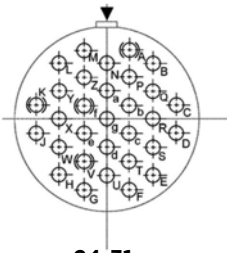

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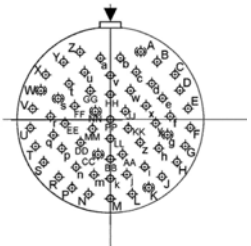

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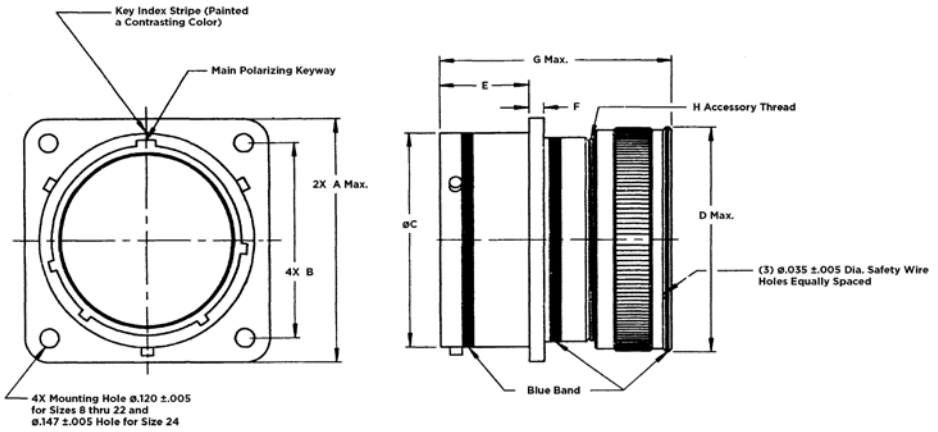

22-55


24-19


24-31


24-61

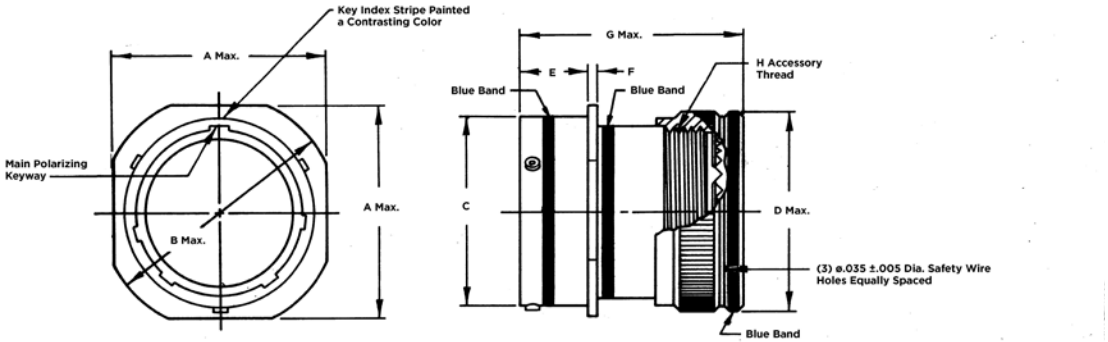
AFD50 & MS3470



AFD50 & MS3470

Size	A		B ± .005		C ± .000/-.005		D		E ± .031/-.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

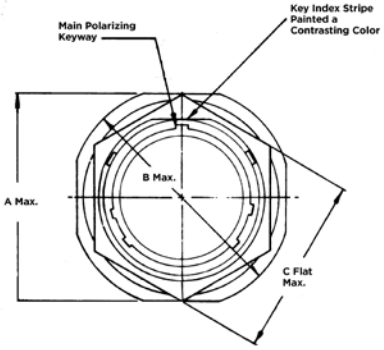
AFD51 & MS3471

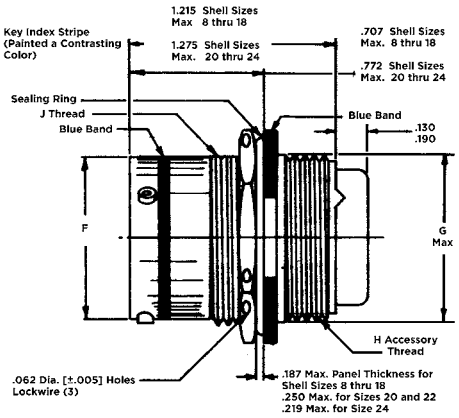


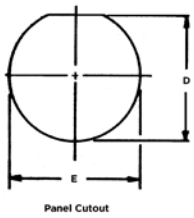
AFD51 & MS3471

Size	A		B ± .005		C ± .000/-.005		D		E ± .031/-.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



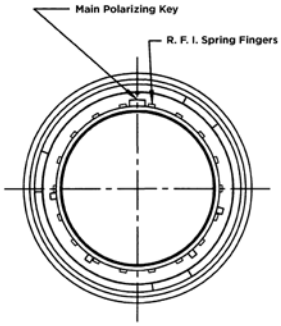


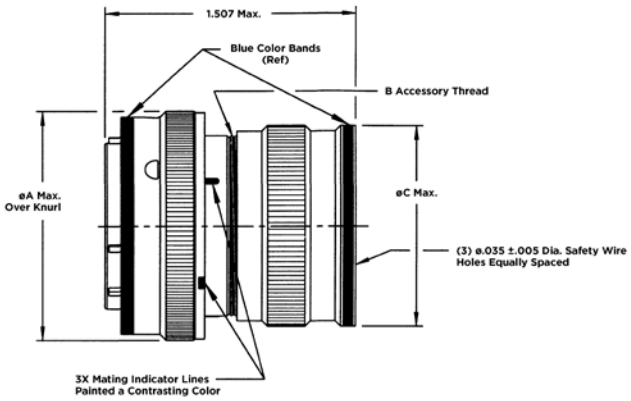


AFD54 & MS3474

Size	A		B		C ± .005		D ± .005		F ± .000/-.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

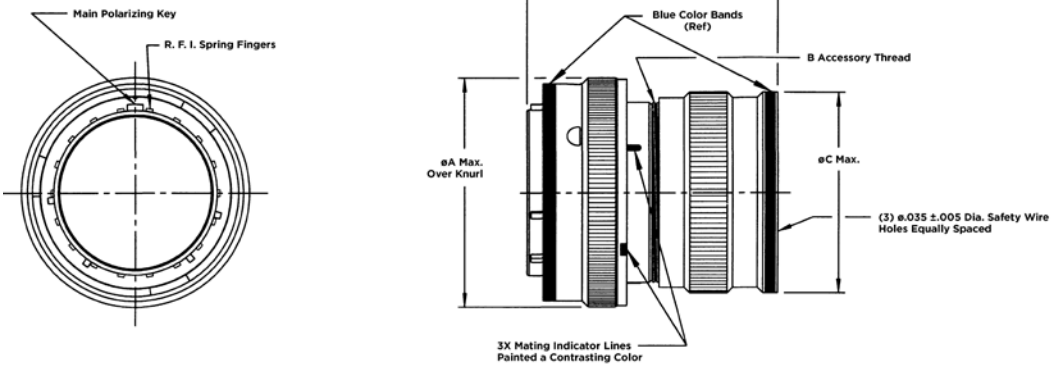




AFD56 & MS3476

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

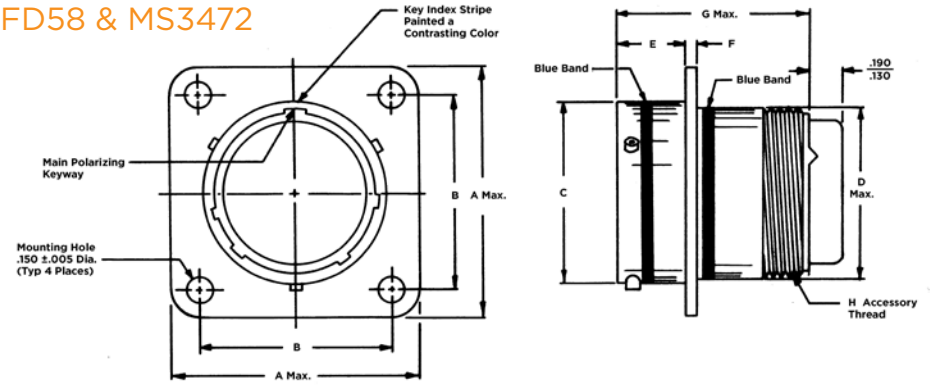
AFD57 & MS3475



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/-.005		D		E ± .031/-.000		F ± .015		G		H Thread
	in	mm	in	mm	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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