



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 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

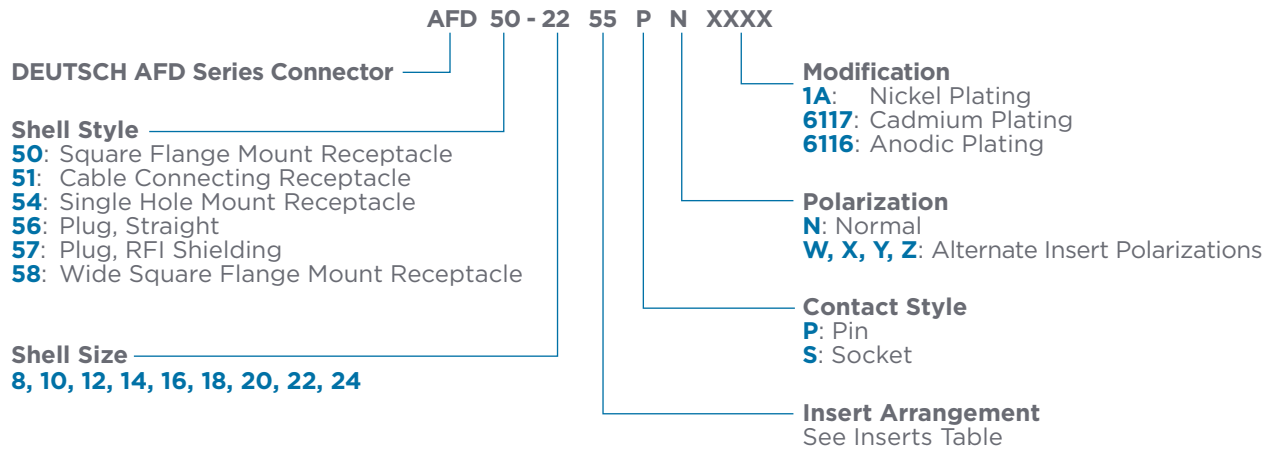
TE Components . . . TE Technology . . . TE Know-how . . .

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

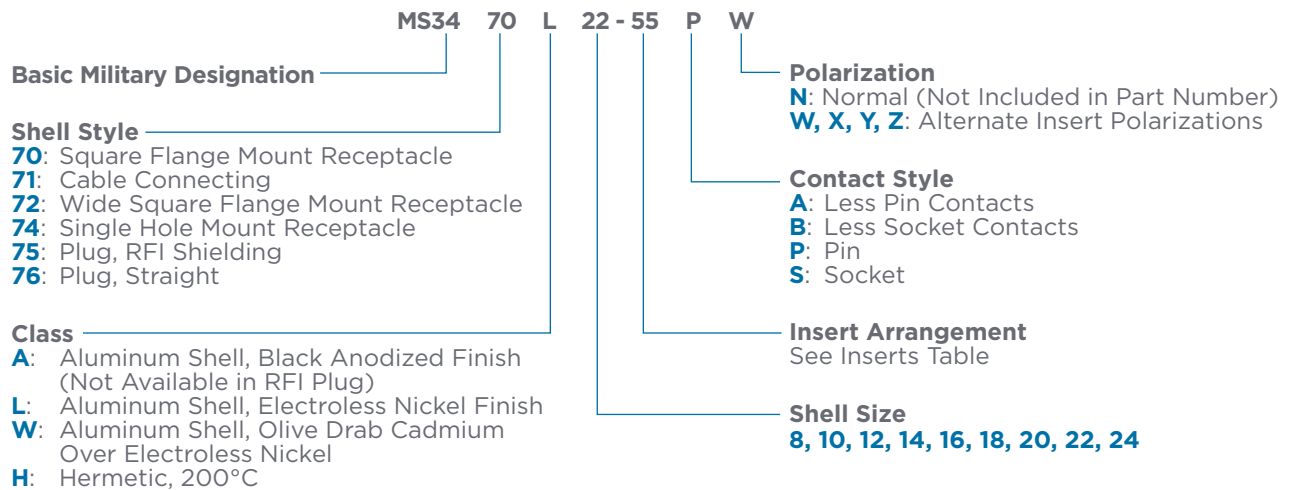
Empower Engineers to Solve Problems, Moving the World Forward.



DEUTSCH AFD Series Part Numbering System



MIL-DTL-26482 Part Numbering System



Insert Arrangements

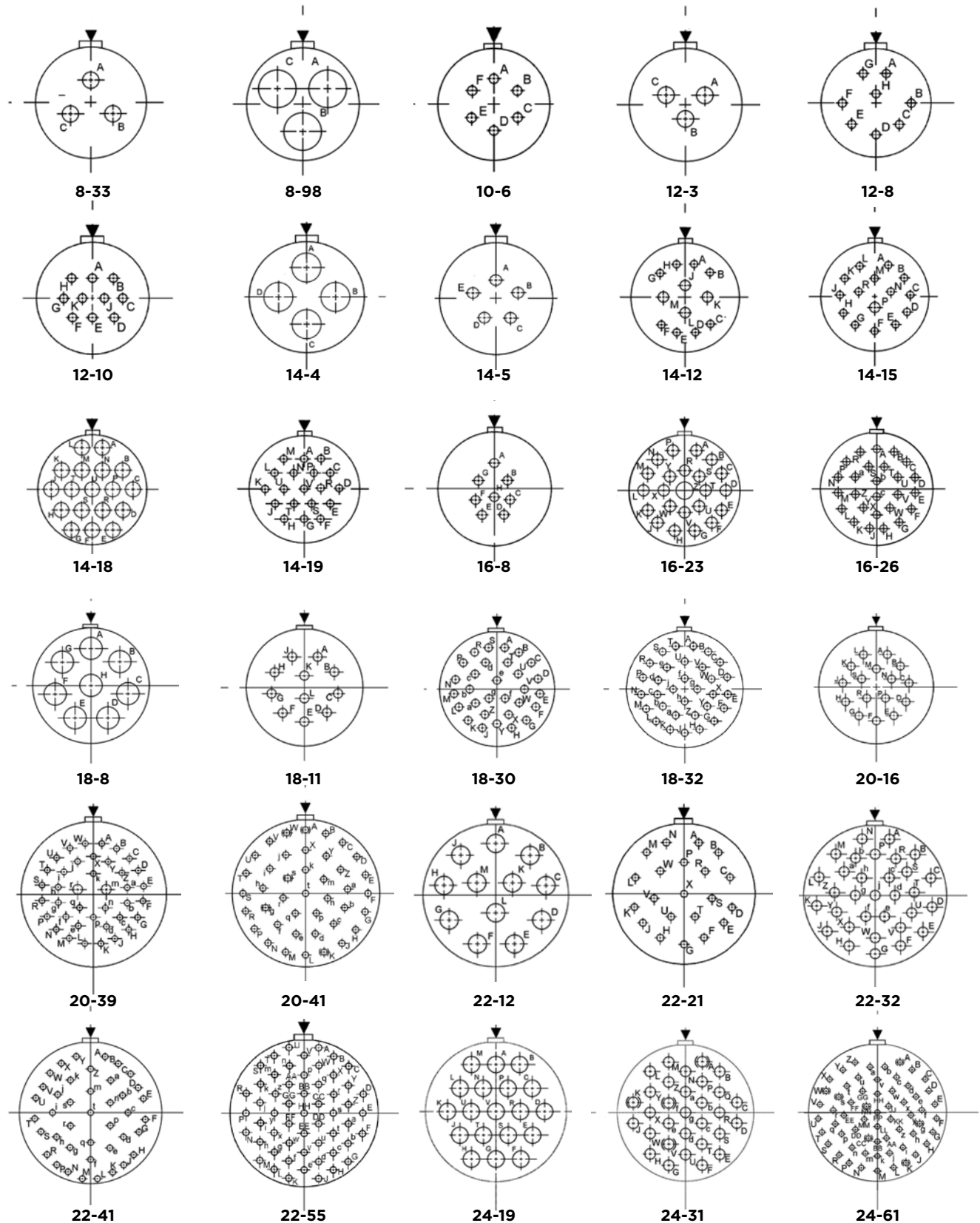
Insert	Contact Size			Insert Positions
	20	16	12	
8-33	3	—	—	N, W
8-98	3	—	—	N
10-6	6	—	—	N, W
12-3	—	3	—	N, Y
12-8	8	—	—	N, W, X, Y, Z
12-10	10	—	—	N, W, X, Y, Z
14-4	—	—	4	N, W
14-5	—	5	—	N, W, X, Y, Z
14-12	8	4	—	N, W, X
14-15	14	1	—	N, W, X, Y, Z

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, Z
22-12	—	—	12	N
22-21	—	21	—	N, W, X, Y, Z
22-32	32	—	—	N, W, X, Y, Z
22-41	27	14	—	N, W, X, Y, Z
22-55	55	—	—	N, W, X, Y, Z
24-19	—	—	19	N, W, X, Y, Z
24-31	—	31	—	N, W, X, Y, Z
24-61	61	—	—	N, W, X, Y, Z

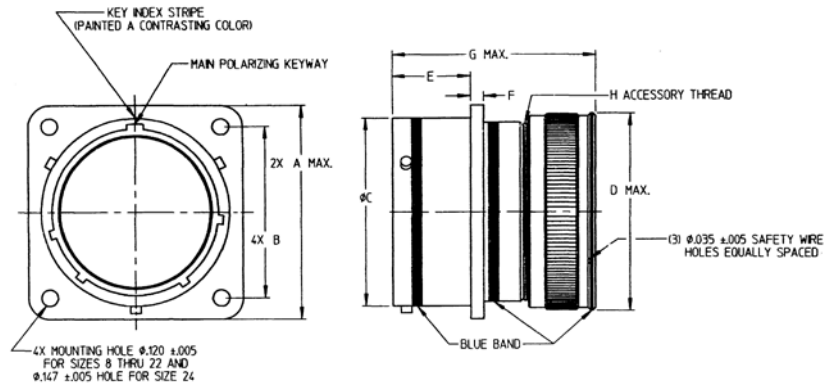


Insert Arrangements





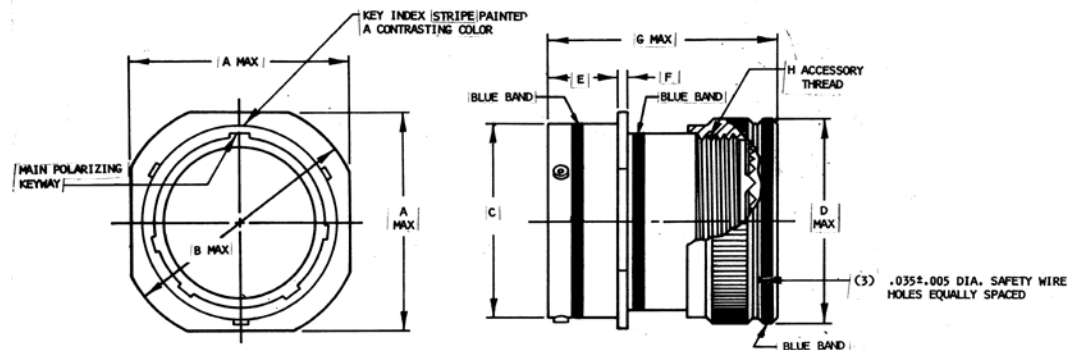
AFD50 & MS3470



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

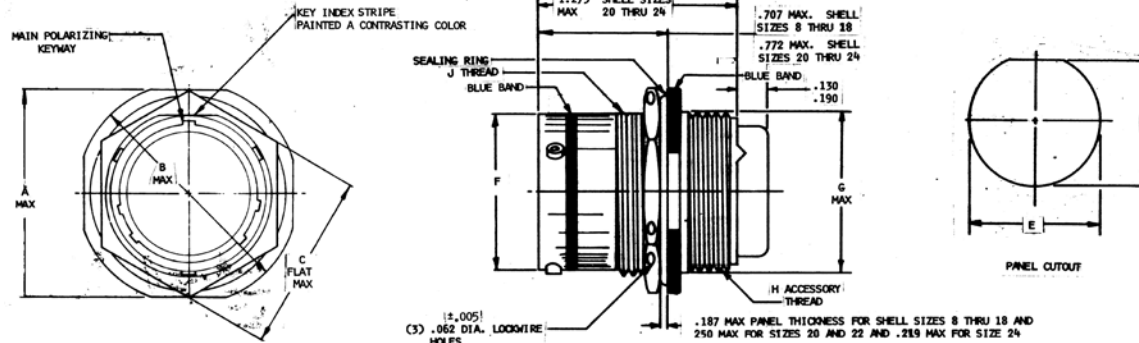


AFD51 & MS3471

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



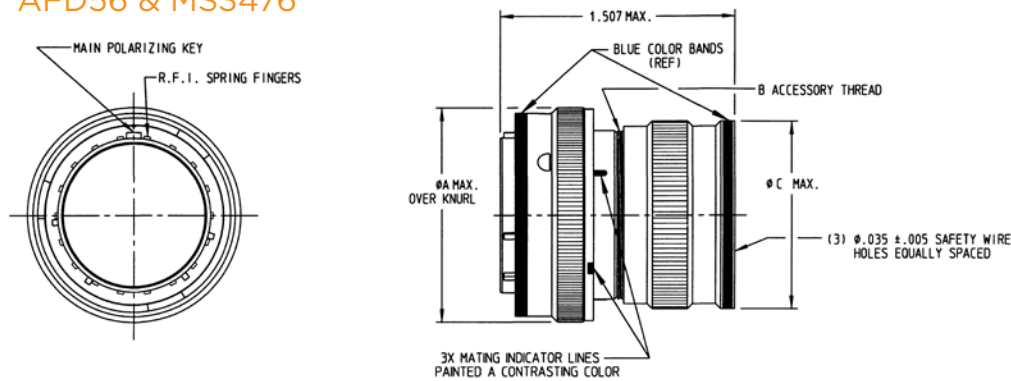
AFD54 & MS3474



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

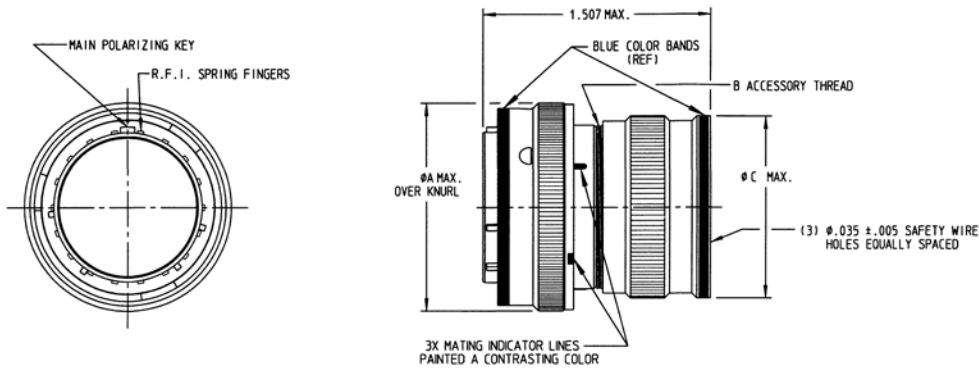


AFD56 & MS3476

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



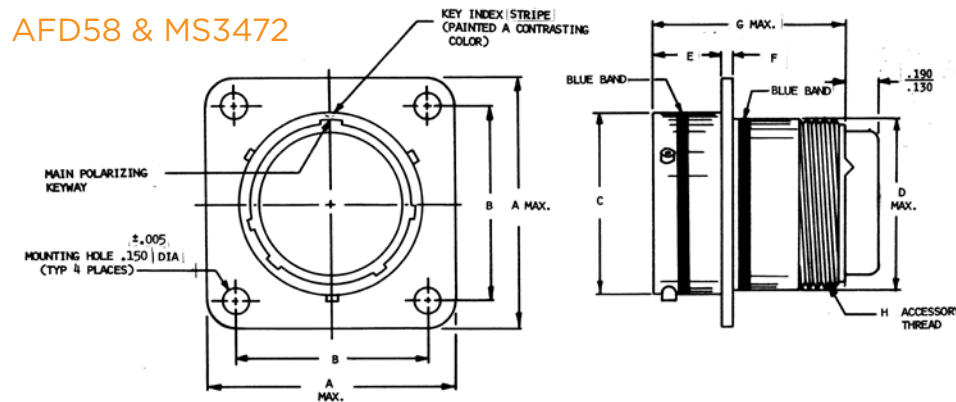
AFD57 & MS3475



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	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

LET'S CONNECT

We make it easy to connect with our experts and are ready to provide all the support you need. Just call your local support number or visit te.com to chat with a Product Information Specialist.

Technical Support

te.com/support-center

North America	+1 800 522 6752	Asia Pacific	+86 400 820 6015
North America (Toll)	+1 717 986 7777	Japan	+81 044 844 8180
EMEA/South Africa	+800 0440 5100	Australia	+61 2 9554 2695
EMEA (Toll)	+31 73 624 6999	New Zealand	+64 (0) 9 634 4580
India (Toll-Free)	+800 440 5100		

te.com/afd

AMP, AGASTAT, CII, DEUTSCH, HARTMAN, KILOVAC, MICRODOT, NANONICS, POLAMCO, Raychem, SEACON, TE, TE Connectivity and the TE connectivity (logo) are trademarks of TE Connectivity. Other products, logos, and company names mentioned herein may be trademarks of their respective owners.

While TE Connectivity (TE) has made every reasonable effort to ensure the accuracy of the information herein, nothing herein constitutes any guarantee that such information is error-free, or any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. The TE entity issuing this publication reserves the right to make any adjustments to the information contained herein at any time without notice. All implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose are expressly disclaimed. The dimensions herein are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice.

Consult TE for the latest dimensions and design specifications.

© 2017 TE Connectivity. All Rights Reserved.

1-1773850-3 11/17