

Front Release System using standard MS tooling

Cannon's M28840/KFS connectors are designed to meet the rigid specifications of MIL-C-28840. These circular, threaded coupling connectors feature high contact density, front release crimp contacts, high impact shock resistance, and are designed for use with navy shipboard cable MIL-C-915, MIL-C-24640, MIL-C-24643 and MIL-W-16878 wire.

M28840/KFS connectors utilize fluid resistant, fluorosilicone elastomers to provide maximum protection against fuels, oils, coolants and cleansers.

High quality manufacturing processes and materials combine to ensure the optimum in performance and reliability under an extreme range of environmental conditions, which include high impact shock, corrosion, vibration, moisture-resistance and water pressure. Temperature withstanding capabilities range from -55°C to +200°C (-67°F to +392°F).

M28840/KFS connectors are available in nine shell sizes, accommodating from seven contacts in shell size 11 up to 155 contacts in shell size 33, and have a multiple keying arrangement to prevent mismatching.

Also available as KFS connectors are printed circuit contacts for a variety of P.C. board/flex circuit applications, 16 AWG contact sizes,\* EMP adapters/EMI RFI filters, connector savers, press fit solder pins and fiber optic contacts, high performance EMI versions and thru-bulkhead fittings.

**EMI Shielding**

EMI suppression is obtained by means of spring fingers located on the plug. During mating, multiple spring fingers make contact with the receptacle at least .040 (1.02) before pin and socket electrical engagement occurs. In addition, a metal to metal shield is obtained when accessories are attached to the rear of the connector through a unique spline and ramp system. This total system provides the most effective EMI protection in the industry.

**Scoop Proof**

100% scoop-proof protection on all connectors eliminates bent pins as well as inadvertent electrical contact whether pins are mounted in the plug or receptacle.

**Multiple Keying**

Locksmith keying allows alternate polarizations eliminating the possibility of mismatching.

**Quick Engagement**

Double start-rapid advance thread provides rapid engagement and disengagement of connector in 1-1/2 turns.

**High Density**

Maximum density of contacts is obtained without sacrificing ruggedness required for high shock and vibration while holding size to a minimum.

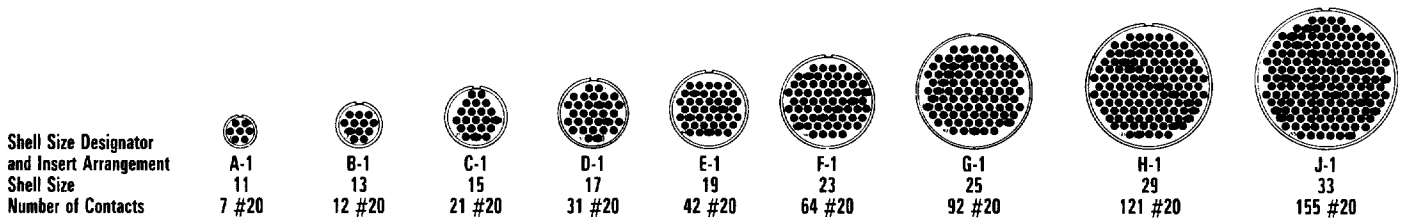
**Corrosion Resistant\*\***

Standard finish — olive drab chromate over cadmium over nickel finish provides in excess of 500 hours of protection from salt spray without degradation of connector performance. Stainless steel with black chromate over cadmium over nickel finish provides protection in areas of direct salt exposure.

\*Consult factory

\*\*KFS connectors are available using alternate materials which will exceed a ten thousand hour (10,000 hrs.) salt spray. These connectors are intermateable & intermountable with both aluminum and stainless steel connectors from ITT Cannon.

**Contact Arrangements**



**Components — Standard**

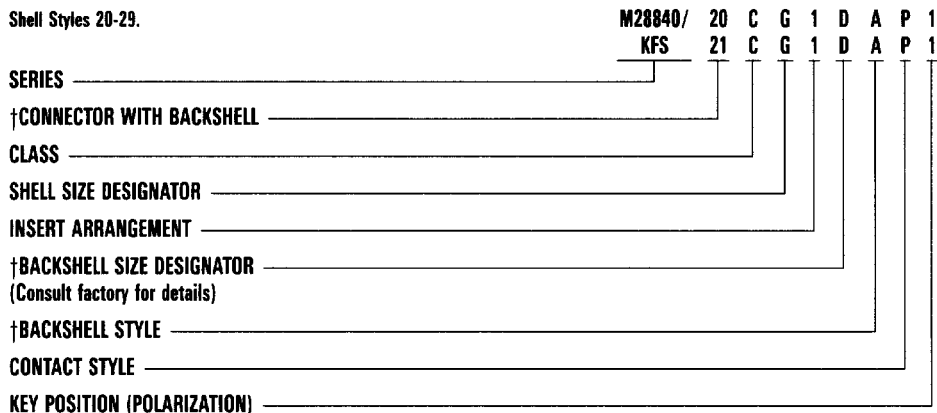
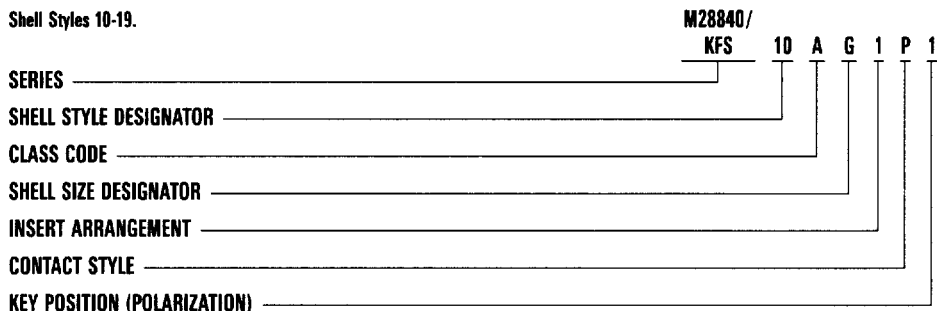
**Standard Contact Part Numbers**

Mating End Size	Wire Barrel Size	MS Contact Part Number		Cannon Contact Part Number	
		Pin	Socket	Pin	Socket
20	20	M39029/83-508	M39029/84-509	030-8085-700	031-8005-700
20	22	M39029/83-450	M39029/84-452	030-8008-800	031-8004-300
20	28	M39029/83-451	M39029/84-453	030-8009-100	031-8004-400

**Seal Plug Part Numbers**

MS Seal Plug Part Number	Cannon Seal Plug Part Number
MS27186	980-8003-000
MS27186	980-8003-000
MS27186	980-8003-000

How to Order



† Add for connector with backshells.

**SERIES**

- M28840 – MIL-C-28840 Prefix
- \*\*KFS – ITT Cannon Prefix for non-specification connectors

**SHELL STYLE DESIGNATOR**

Use shell styles 10-16 when ordering connectors without backshells.

- 10 – Receptacle, Wall Mounting
- 11 – Receptacle, Cable Connecting
- 12 – Receptacle, Box Mounting, Non-Environmental
- 14 – Receptacle, Jam Nut Mounting
- 16 – Plug, Cable Connecting

Use shell styles 17-19 when ordering connectors with strain reliefs.

- 17 – Plug, Cable with Connecting Strain Relief, Open Wire Straight
- 18 – Plug, Cable with Strain Relief, Open Wire 90°
- 19 – Plug, Cable with Strain Relief, Open Wire 45°

Use shell styles 20-29 when ordering connectors with backshells.

- 20 – Receptacle, Wall Mounting with Backshell, Jacket Cable Straight
- 21 – Receptacle, Cable Connecting with Backshell, Jacket Cable Straight
- 26 – Plug, Cable Connecting with Backshell, Jacket Cable Straight
- 28 – Plug, Cable Connecting with Backshell, Jacket Cable 90°
- 29 – Plug, Cable Connecting with Backshell, Jacket Cable 45°

**CLASS**

Code Letter	Class	Description
A	D	Aluminum Alloy connector with Cadmium (olive drab) over electroless nickel finish—fluorosilicone elastomer seals.
B	DS	Stainless Steel Connector with Cadmium (black) finish—fluorosilicone elastomer seals.
C	DJ	Aluminum Alloy Backshell-Connector Assembly with Cadmium (olive drab) over electroless nickel finish—fluorosilicone elastomer seals.
E	DJS	Stainless Steel Backshell-Connector Assembly with Cadmium (black) finish—fluorosilicone elastomer seals.

**SHELL SIZE AND INSERT ARRANGEMENT**

Shell Size Designator	Shell Size	Insert Arrangement	No. of Contacts
A	11	1	7
B	13	1	12
C	15	1	21
D	17	1	31
E	19	1	42
F	23	1	64
G	25	1	92
H	29	1	121
J	33	1	155

**BACKSHELL SIZE**

(Applies to Shell Style 20, 21, 26, 28, 29 only)  
A, B, C, or D

The backshell sizes are identified by the appropriate letter: A, B, C or D depending upon cable diameter as shown in the plug assembly section of this catalog

**BACKSHELL STYLE**

(Applies to Shell Style 20, 21, 26, 28, 29 only)

- A – EMI Jacketed Cable
- B – Non-EMI Jacketed Cable

**CONTACT STYLE**

- P – Contact, No. 20 Pin with Crimp for 22-26 Gauge
- S – Contact, No. 20 Socket with Crimp for 22-26 Gauge
- D – Contact, No. 20 Pin with Crimp for 28 Gauge
- E – Contact, No. 20 Socket with Crimp for 28 Gauge
- F – Contact, No. 20 Pin with Crimp for 20 Gauge
- G – Contact, No. 20 Socket with Crimp for 20 Gauge
- A – Pin Insert—Less Contacts\*
- B – Socket Insert—Less Contacts\*

**KEY POSITION (POLARIZATION)**

1,2,3,4,5,6

\*A and B signify a mixed complement of contact crimp barrel sizes. Contacts must be ordered separately, consult factory. Used only with KFS designation.

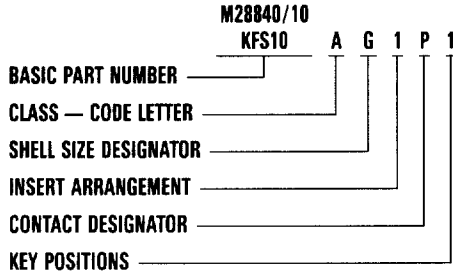
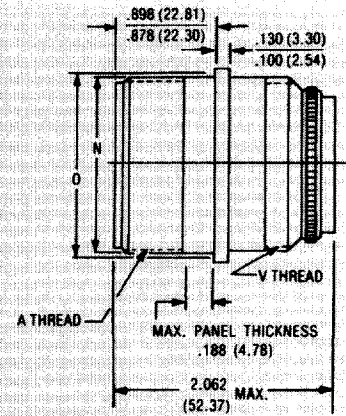
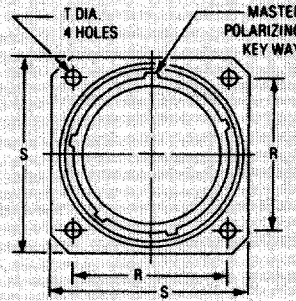
\*\*Consult factory for connector savers, EMI versions and corrosion resistant connectors & adapters.

Circular Connectors

Wall Mounting Receptacle

M28840/10  
(Class D and DS)

KFS10

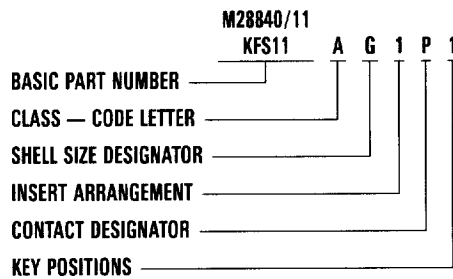
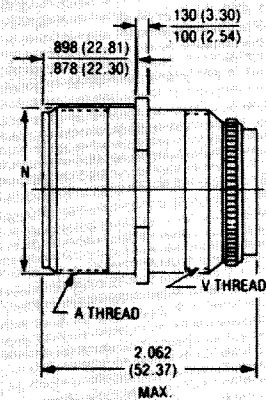
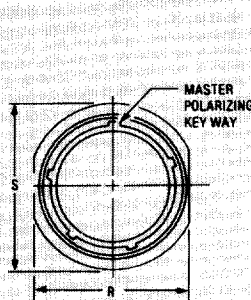


Shell Size Designator	Shell Size	A Thread Class 2A	V Thread Class 2A	N Dia. Max.	O Dia. (Ref. Mtg. Hole)	R T.P.	S ±.020 (0.51)	T Dia. +.015 (0.38) - .000 (0.00)
A	-11	.750-.1P-.2L-D.S.	3/4-20 UNEF	.750 (19.05)	.812 (20.62)	.750 (19.05)	1.023 (25.98)	.115 (2.92)
B	-13	.875-.1P-.2L-D.S.	7/8-20 UNEF	.875 (22.22)	.937 (23.80)	.843 (21.41)	1.138 (28.91)	.115 (2.92)
C	-15	1.062-.1P-.2L-D.S.	1-20 UNEF	1.062 (26.97)	1.124 (28.55)	.968 (24.59)	1.258 (31.95)	.115 (2.92)
D	-17	1.125-.1P-.2L-D.S.	1 1/8-18 UNEF	1.125 (28.58)	1.187 (30.15)	1.015 (25.78)	1.383 (35.13)	.115 (2.92)
E	-19	1.312-.1P-.2L-D.S.	1 1/4-18 UNEF	1.312 (33.32)	1.374 (34.90)	1.140 (28.96)	1.508 (38.30)	.115 (2.92)
F	-23	1.500-.1P-.2L-D.S.	1 7/16-18 UNEF	1.500 (38.10)	1.562 (39.67)	1.281 (32.54)	1.718 (43.64)	.115 (2.92)
G	-25	1.625-.1P-.2L-D.S.	1 9/16-18 UNEF	1.625 (41.28)	1.687 (42.85)	1.392 (35.36)	1.818 (46.18)	.142 (3.61)
H	-29	1.812-.1P-.2L-D.S.	1 7/8-16 UN	1.812 (46.02)	1.937 (49.20)	1.568 (39.83)	2.138 (54.31)	.142 (3.61)
J	-33	2.000-.1P-.2L-D.S.	2 1/16-16 UNS	2.000 (50.80)	2.124 (53.95)	1.734 (44.04)	2.328 (59.13)	.168 (4.27)

Cable Connecting Receptacle

M28840/11  
(Class D and DS)

KFS11

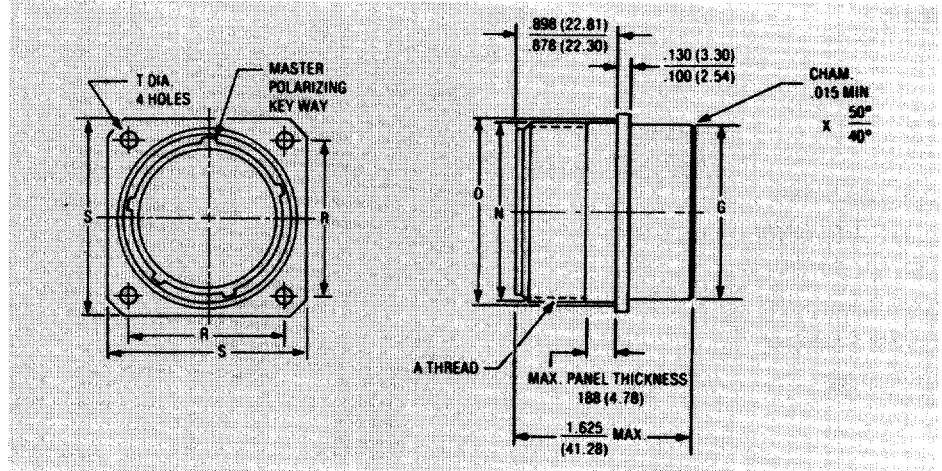
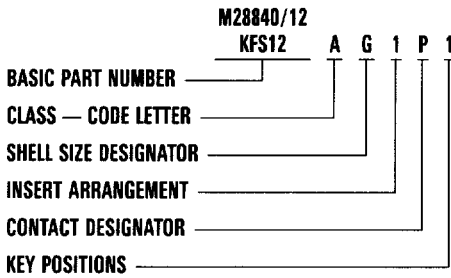


Shell Size Designator	Shell Size	A Thread Class 2A	V Thread Class 2A	N Dia. Max.	R ±.005 (0.13)	S ±.010 (0.25)
A	-11	.750-.1P-.2L-D.S.	3/4-20 UNEF	.750 (19.05)	.763 (19.38)	.953 (24.21)
B	-13	.875-.1P-.2L-D.S.	7/8-20 UNEF	.875 (22.22)	.888 (25.56)	1.078 (27.38)
C	-15	1.062-.1P-.2L-D.S.	1-20 UNEF	1.062 (26.97)	1.075 (27.30)	1.265 (32.13)
D	-17	1.125-.1P-.2L-D.S.	1 1/8-18 UNEF	1.125 (28.58)	1.138 (28.91)	1.328 (33.73)
E	-19	1.312-.1P-.2L-D.S.	1 1/4-18 UNEF	1.312 (33.32)	1.325 (33.66)	1.515 (38.48)
F	-23	1.500-.1P-.2L-D.S.	1 7/16-18 UNEF	1.500 (38.10)	1.513 (38.43)	1.703 (43.26)
G	-25	1.625-.1P-.2L-D.S.	1 9/16-18 UNEF	1.625 (41.28)	1.638 (41.61)	1.828 (46.43)
H	-29	1.812-.1P-.2L-D.S.	1 7/8-16 UN	1.812 (46.02)	1.888 (47.96)	2.078 (52.78)
J	-33	2.000-.1P-.2L-D.S.	2 1/16-16 UNS	2.000 (50.80)	2.075 (52.70)	2.265 (57.53)

Box Mounting Receptacle

M28840/12  
(Class D and DS)

KFS12

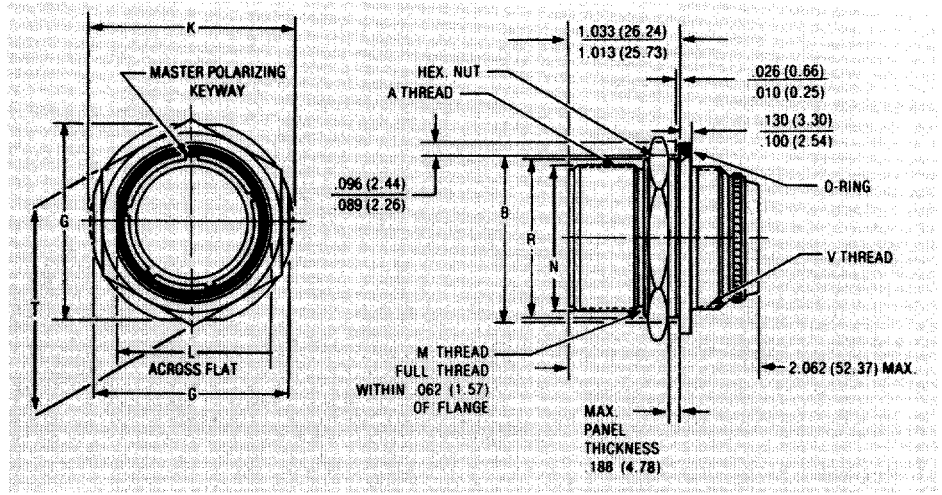
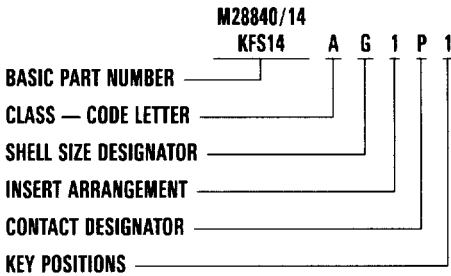


Shell Size Designator	Shell Size	A Thread Class 2A	N. Dia. Max.	O. Dia. (Ref. Mtg. Hole)	R T.P.	S ±.020 (0.51)	T Dia. +.015 (0.38) - .000 (0.00)	G Max.
A	-11	.750-.1P-.2L-D.S.	.750 (19.05)	.812 (20.62)	.750 (19.05)	1.023 (25.98)	.115 (2.92)	.755 (19.18)
B	-13	.875-.1P-.2L-D.S.	.875 (22.22)	.937 (23.80)	.843 (21.41)	1.138 (28.91)	.115 (2.92)	.880 (22.35)
C	-15	1.062-.1P-.2L-D.S.	1.062 (26.97)	1.124 (28.55)	.968 (24.59)	1.258 (31.95)	.115 (2.92)	1.005 (25.53)
D	-17	1.125-.1P-.2L-D.S.	1.125 (28.58)	1.187 (30.15)	1.015 (25.78)	1.383 (35.13)	.115 (2.92)	1.130 (28.70)
E	-19	1.312-.1P-.2L-D.S.	1.312 (33.32)	1.374 (34.90)	1.140 (28.96)	1.508 (38.30)	.115 (2.92)	1.255 (31.88)
F	-23	1.500-.1P-.2L-D.S.	1.500 (38.10)	1.562 (39.67)	1.281 (32.54)	1.718 (43.64)	.115 (2.92)	1.443 (36.65)
G	-25	1.625-.1P-.2L-D.S.	1.625 (41.28)	1.687 (42.85)	1.392 (35.36)	1.818 (46.18)	.142 (3.61)	1.567 (39.80)
H	-29	1.812-.1P-.2L-D.S.	1.812 (46.02)	1.937 (47.60)	1.568 (39.84)	2.138 (54.31)	.142 (3.61)	1.880 (47.75)
J	-33	2.000-.1P-.2L-D.S.	2.000 (50.80)	2.124 (52.37)	1.734 (44.04)	2.328 (59.13)	.168 (4.27)	2.067 (52.50)

Jam Nut Receptacle

M28840/14  
(Class D and DS)

KFS14



Shell Size Designator	Shell Size	A Thread Class 2A	M Thread Class 2A	V Thread Class 2A	G ±.010 (0.25)	K ±.010 (0.25)	L +.009 (0.23) - .000 (0.00)	N Max.	R Max.	B ±.005 (0.13)	T ±.017 (0.43)
A	-11	.750-.1P-.2L-D.S.	7/8-20 UNEF	3/4-20 UNEF	1.264 (32.11)	1.358 (34.49)	.832 (21.13)	.750 (19.05)	.875 (22.22)	.974 (24.74)	1.062 (26.97)
B	-13	.875-.1P-.2L-D.S.	1-20 UNEF	7/8-20 UNEF	1.389 (35.28)	1.498 (38.05)	.957 (24.31)	.875 (22.22)	1.000 (25.40)	1.099 (27.91)	1.188 (30.18)
C	-15	1.062-.1P-.2L-D.S.	1 3/16-18 UNEF	1-20 UNEF	1.577 (40.06)	1.671 (42.44)	1.144 (29.06)	1.062 (26.97)	1.188 (30.18)	1.287 (32.69)	1.375 (34.92)
D	-17	1.125-.1P-.2L-D.S.	1 1/4-18 UNEF	1 1/8-18 UNEF	1.639 (41.63)	1.733 (44.02)	1.207 (30.66)	1.125 (28.58)	1.250 (31.75)	1.349 (34.26)	1.438 (36.53)
E	-19	1.312-.1P-.2L-D.S.	1 7/16-18 UNEF	1 1/4-18 UNEF	1.827 (46.41)	1.921 (48.79)	1.394 (35.41)	1.312 (33.32)	1.438 (36.53)	1.537 (39.04)	1.625 (41.28)
F	-23	1.500-.1P-.2L-D.S.	1 5/8-18 UNEF	1 7/16-18 UNEF	2.014 (51.16)	2.108 (53.54)	1.582 (40.18)	1.500 (38.10)	1.625 (41.28)	1.724 (43.79)	1.812 (46.02)
G	-25	1.625-.1P-.2L-D.S.	1 3/4-18 UNS	1 9/16-18 UNEF	2.139 (54.33)	2.233 (56.72)	1.707 (43.36)	1.625 (41.28)	1.750 (44.45)	1.849 (46.96)	2.000 (50.80)
H	-29	1.812-.1P-.2L-D.S.	1 15/16-16 UN	1 7/8-16 UN	2.327 (59.11)	2.425 (61.60)	1.894 (48.11)	1.812 (46.02)	1.938 (49.23)	2.037 (51.74)	2.188 (55.58)
J	-33	2.000-.1P-.2L-D.S.	2 1/8-16 UN	2 1/16-16 UNS	2.514 (63.86)	2.608 (66.24)	2.082 (52.88)	2.000 (50.80)	2.125 (54.98)	2.224 (56.49)	2.375 (60.32)



Dimensions are shown in inches (millimeters).  
Dimensions subject to change.

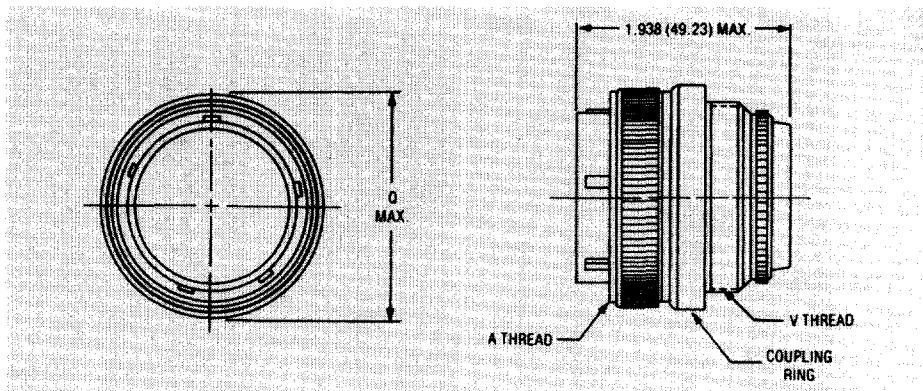
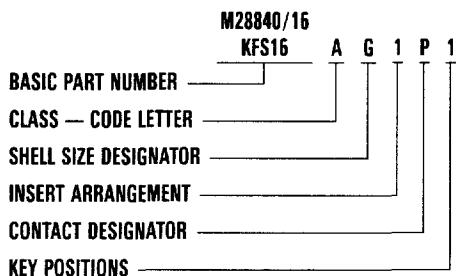
For technical assistance, price or delivery information, call your local technical sales office or distributor.

Circular Connectors

## Cable Connecting Plug

M28840/16  
(Class D and DS)

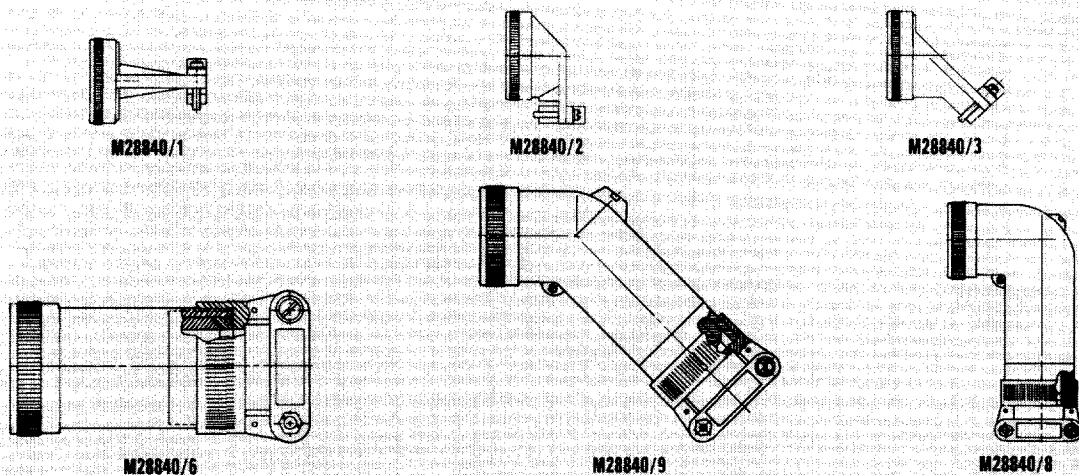
KFS16



Shell Size Designator	Shell Size	A Thread Class 2B	V Thread Class 2A	Ø Dia. Max.
A	-11	.750-.1P-.2L-D.S.	3/4-20 UNEF	1.028 (26.11)
B	-13	.875-.1P-.2L-D.S.	7/8-20 UNEF	1.141 (28.98)
C	-15	1.062-.1P-.2L-D.S.	1-20 UNEF	1.263 (32.08)
D	-17	1.125-.1P-.2L-D.S.	1 1/8-18 UNEF	1.387 (35.23)
E	-19	1.312-.1P-.2L-D.S.	1 1/4-18 UNEF	1.513 (38.43)
F	-23	1.500-.1P-.2L-D.S.	1 7/16-18 UNEF	1.703 (43.26)
G	-25	1.625-.1P-.2L-D.S.	1 9/16-18 UNEF	1.825 (46.36)
H	-29	1.812-.1P-.2L-D.S.	1 7/8-16 UN	2.143 (54.43)
J	-33	2.000-.1P-.2L-D.S.	2 1/16-16 UNS	2.329 (59.16)

## Backshell Styles

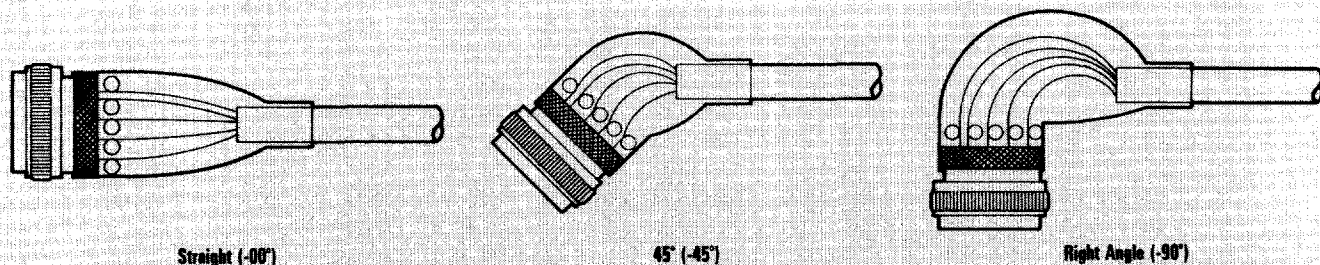
M28840



KFS-UBK/KFS-RBK/KFS-TBK

Spin coupling adapter and heat shrinkable boots.

(For UBK - Unshielded Boot, RBK - Shielded Boot, TBK - \*Timel-Lock - Shielded Boot.)



Consult ITT Cannon Canada for ordering information.

\*Trademark of Raychem

**ITT Cannon**

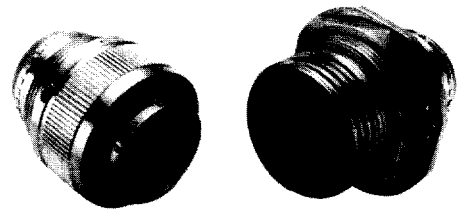
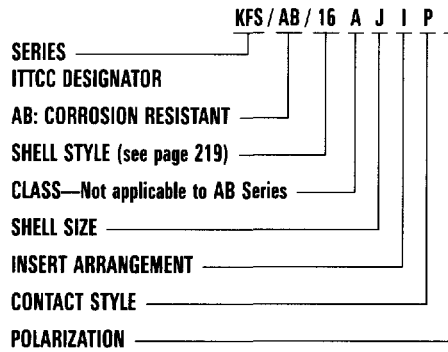
Dimensions are shown in inches (millimeters).

Dimensions subject to change.

For technical assistance, price or delivery information, call your local technical sales office or distributor.

**KFS Aluminum Bronze (AB) Series, Corrosion Resistant**

The KFS/AB/ Series of connecting devices has been developed specifically for long term corrosion resistance without sacrificing mechanical strength or electrical requirements. The AB series is capable of withstanding at least 10,000 hours of salt spray without noticeable change in performance and is completely intermateable/intermountable with their aluminum and stainless steel counterparts. All MIL-C-28840 parameters have been maintained. Applications include — Navy shipboard, both above and below decks, submersibles including ROV's, towed bodies and submarines for military/defence and R&D/leisure applications.

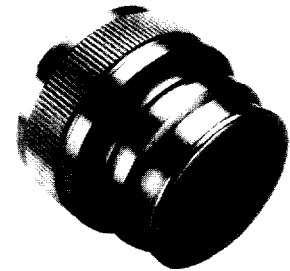
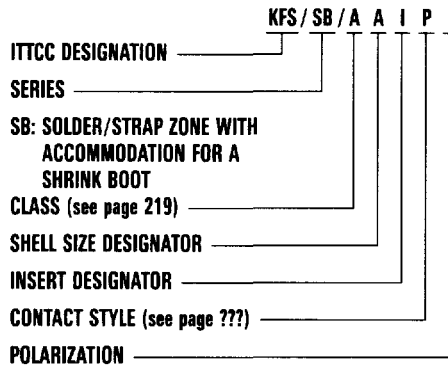


Circular Connectors

**KFS/SB Series**

This series features a solder zone for braided cable and a lip to accommodate a shrink boot. The standard M28840 is threaded to accept a large metal backshell for the very heavy MIL-C-915 type cables. Recently, low smoke, halogen free cable has been introduced which is quite flexible and does not need a heavy backshell. EMI shielding effectiveness has been greatly enhanced by soldering the braid directly to the connector.

Note: All M28840 parameters (including tooling) have been maintained.



**KFS/CB Connector Saver Series**  
**KFS/CSF Connector Saver with flange**  
**KFS/TBR Connector Saver thru-bulkhead receptacle**

This series of connecting devices is used to protect the M28840/KFS receptacle interface (either pin or socket) from damage. The TBR series is a thru-bulkhead receptacle which allows cable plugs to be wired and tested prior to final assembly. Plugs are then mated to the mounted TBR connector to complete the installation.

The connector saver, connector saver with flange and thru-bulkhead receptacle all feature a hard dielectric insert assembly with lead-in chamfers for positive alignment of pins and sockets. Environmental sealing is maintained per MIL-C-28840 by way of a gasket seal under the coupling nut mechanism. The series conforms to all parameters outlined in MIL-C-28840 and is intended to be used in areas of extreme abuse. A clear cadmium over nickel plate identifies the CS series from standard product.

