

Amphenol

Ship Board Connectors
Rev. 10 / 21

Amphenol

SHIP BOARD CONNECTORS



Amphenol

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Overview

Amphenol is a leading manufacturer of connectors now offers complete line of M28840 circular connectors according to MIL-DTL -28840. These shipboard application connectors are precision-machined, highly reliable, and meet superior mechanical shock performances. These high-density connectors are designed and tested to withstand extreme environmental conditions and demanding applications. Amphenol also offer the full range of backshells to support this connector series.

Features

Precision-machined to MIL-DTL-28840 specification

Available in Nine shell sizes: 11, 13, 15, 17, 19, 23, 25, 29 & 33.

Pin count - 7, 12, 21, 31, 42, 64, 92, 121 and 155.

Plating options – Cadmium, Zinc Nickel

Support connectors as well as kit with accessories.

Six keying options (1,2,3,4,5,6) for both plugs and receptacles.

Contact size is AWG 20 with wire accommodation options from AWG 20 to AWG 28.

Crimp termination, rear insert and front release contacts.

Complete line of straight, 90degree and 45 degree backshells.

Benefits

Fully intermateable and interchangeable with any qualified M28840 connector manufacturer

Backshell designs for strain relief, EMI and environmental sealing.

Options to buy connector kitted with backshell and accessories.

Same application tool for all three types of contacts

Applications

- US Navy Shipboard surface craft and submarine
- Mission critical combat and communication systems
- Mobile tactical shelters electronic battlefield networks
- Mobile emergency telecommunications (MET) stations
- Deployable outdoors in harsh environments



IL - DTL - 28840 Shipboard Electrical Connectors (Performance Specifications)

Performance Specifications	
Current Rating (Max.)	Size # 20 contact 20AWG 7.5A, 22AWG 5.0A, 28AWG 1.5A, 30AWG 1.0A
Test Voltage (Dielectric Withstanding Voltage)	1000 VAC RMS at sea level, test per EIA-364-20
Insulation Resistance	5000 megohms min. (at ambient temp) per EIA-364-21
Contact Resistance	Per SAE-AS39029
Operating Temperature	-55°C to +200°C
Fluid Immersion	Per test method EIA-364-10
Shock	In accordance with MIL-S-901 grade A
Vibration	Per EIA-364-28 test procedure
Magnetic Permeability	2.0 μ (Aluminum) ASTM-A342/A342M

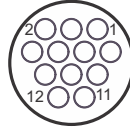
Materials & Finishes	
Shells, Coupling Nuts, Jam Nuts	Aluminum Alloy per ASTM B211, or Stainless Steel per AMS-QQ-S-763
Contacts	Copper Alloy, 50 μ inch Gold plated per ASTM B488 Type 3, Code C Class 1. 27 over nickel underplate per QQ-N-290 Class 2 Socket contact hood: Stainless Steel passivated
Insulators	High Grade Engineering Plastic
Contact Retention Clip	Beryllium Copper
Grommet Seal	Blended Elastomer

Contact Code	Type	Contact Specification	Contact Size	Acceptable Wire Size	Outside Dia. of Finished Wire	
					Min.	Max.
F	Pin	SAE-AS39029/83-508	20-20	24	1.02 (.040)	1.78 (.070)
G	Socket	SAE-AS39029/84-509		22		
P	Pin	SAE-AS39029/83-450	20-22	20		
S	Socket	SAE-AS39029/84-452		26		
D	Pin	SAE-AS39029/83-451	20-28	24		
E	Socket	SAE-AS39029/84-453		22		

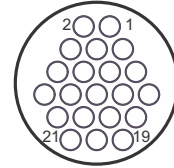
Note:
Wire must be used in accordance with MIL-DTL-16878 to achieve sealing.
All dimensions are in mm (inches).



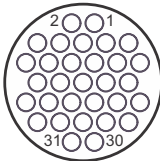
Shell Size 11
7 Contacts



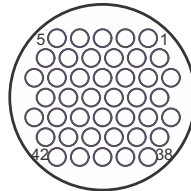
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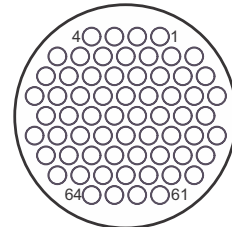
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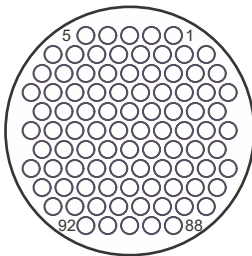
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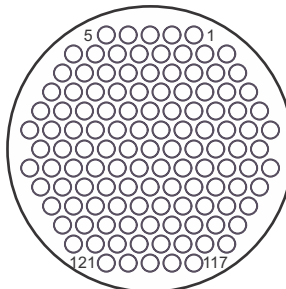
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42 Contacts



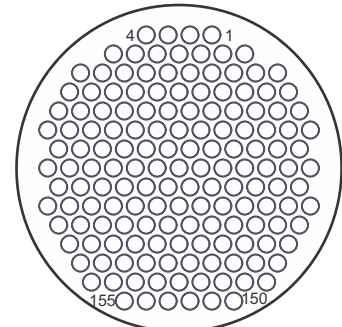
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64 Contacts



Shell Size 25
92 Contacts

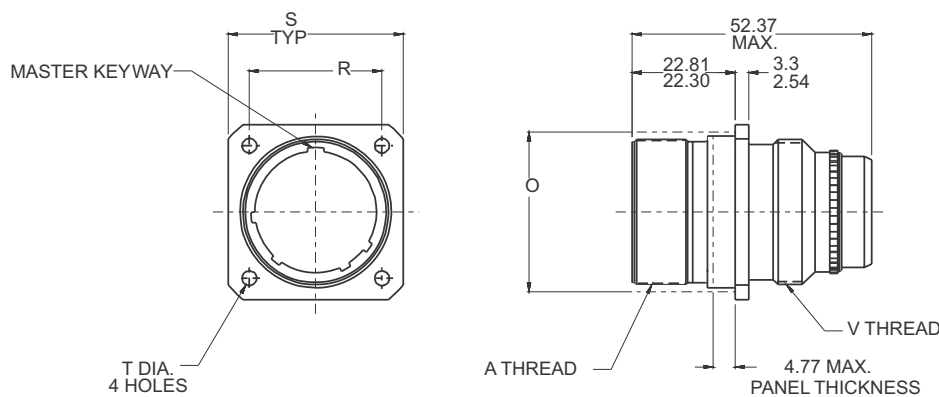
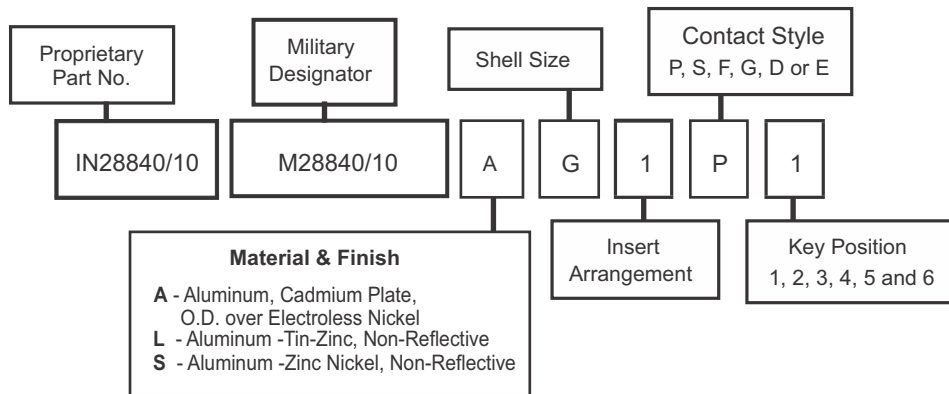


Shell Size 29
121 Contacts



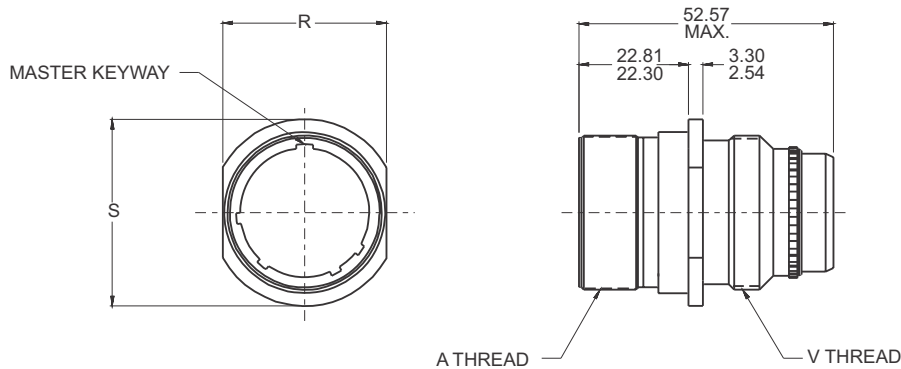
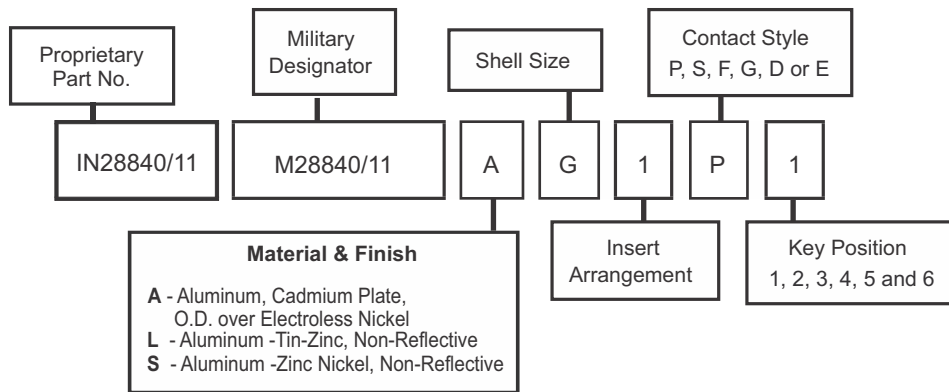
Shell Size 33
155 Contacts

Layouts Per MIL-STD-1698



Military Shell Size	Shell Size	A Thread Class 2A	V Thread Class 2A	Ø Ref. Mtg. Hole	R True Position \varnothing to \varnothing	S	T Diameter
A	11	.750-.1P-.2L-D.S.	.750-20 UNEF	(.812) 20.62	(.750) 19.05	(1.043) 26.49 (1.003) 25.48	(.130) 3.30 (.115) 2.92
B	13	.875-.1P-.2L-D.S.	.875-20 UNEF	(.937) 23.80	(.843) 21.41	(1.158) 29.41 (1.118) 28.40	
C	15	1.062-.1P-.2L-D.S.	1.000-20 UNEF	(1.124) 28.55	(.968) 24.59	(1.278) 32.46 (1.238) 31.45	
D	17	1.125-.1P-.2L-D.S.	1.125-18 UNEF	(1.187) 30.15	(1.01) 25.78	(1.403) 35.64 (1.363) 34.62	
E	19	1.312-.1P-.2L-D.S.	1.250-18 UNEF	(1.374) 34.90	(1.140) 28.96	(1.528) 38.81 (1.488) 37.80	
F	23	1.500-.1P-.2L-D.S.	1.437-18 UNEF	(1.562) 39.67	(1.281) 32.54	(1.738) 44.15 (1.698) 43.13	
G	25	1.625-.1P-.2L-D.S.	1.562-18 UNEF	(1.687) 42.85	(1.392) 35.36	(1.838) 46.69 (1.798) 45.67	(.157) 3.99 (.142) 3.61
H	29	1.812-.1P-.2L-D.S.	1.875-16 UN	(1.874) 47.60	(1.568) 39.83	(2.158) 54.81 (2.118) 53.80	
J	33	2.000-.1P-.2L-D.S.	2.062-16 UNS	(2.062) 52.37	(1.734) 44.04	(2.348) 59.64 (2.308) 58.62	(.183) 4.65 (.168) 4.27

Note: All dimensions are in mm (inches)



Military Shell Size	Shell Size	A Thread Class 2A	V Thread Class 2A	R	S Diameter
A	11	.750-.1P-.2L-D.S.	.750-20 UNEF	(.768) 19.51 (.758) 19.25	(.963) 24.46 (.943) 23.95
B	13	.875-.1P-.2L-D.S.	.875-20 UNEF	(.893) 22.68 (.883) 22.43	(1.088) 27.63 (1.063) 27.13
C	15	1.062-.1P-.2L-D.S.	1.000-20 UNEF	(1.080) 27.43 (1.070) 27.18	(1.275) 32.38 (1.255) 31.88
D	17	1.125-.1P-.2L-D.S.	1.125-18 UNEF	(1.143) 29.03 (1.133) 28.78	(1.338) 33.98 (1.318) 33.48
E	19	1.312-.1P-.2L-D.S.	1.250-18 UNEF	(1.330) 33.78 (1.320) 33.53	(1.525) 38.74 (1.505) 38.23
F	23	1.500-.1P-.2L-D.S.	1.437-18 UNEF	(1.518) 38.56 (1.508) 38.30	(1.713) 43.51 (1.693) 43.00
G	25	1.625-.1P-.2L-D.S.	1.562-18 UNEF	(1.643) 41.73 (1.633) 41.48	(1.838) 46.09 (1.818) 46.18
H	29	1.812-.1P-.2L-D.S.	1.875-16 UN	(1.893) 48.08 (1.883) 47.83	(2.088) 53.04 (2.068) 52.53
J	33	2.000-.1P-.2L-D.S.	2.062-16 UNS	(2.080) 52.83 (2.070) 52.58	(2.275) 57.78 (2.255) 57.28

Note: All dimensions are in mm (inches)

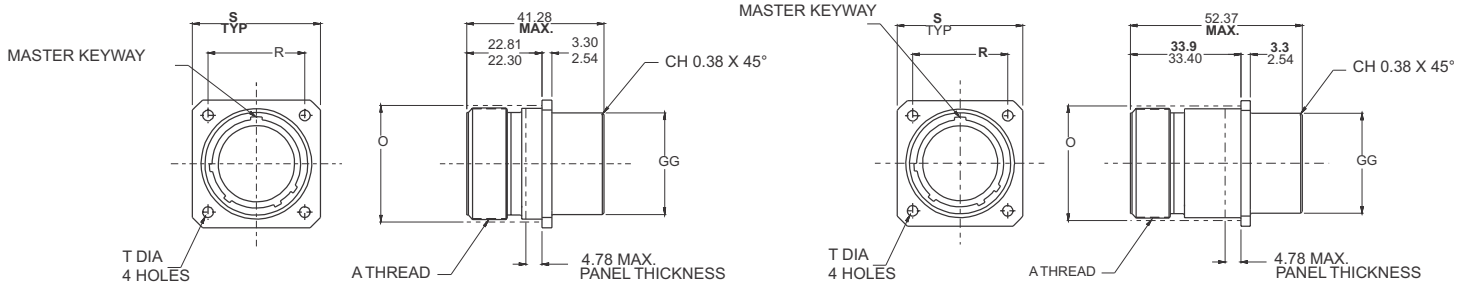
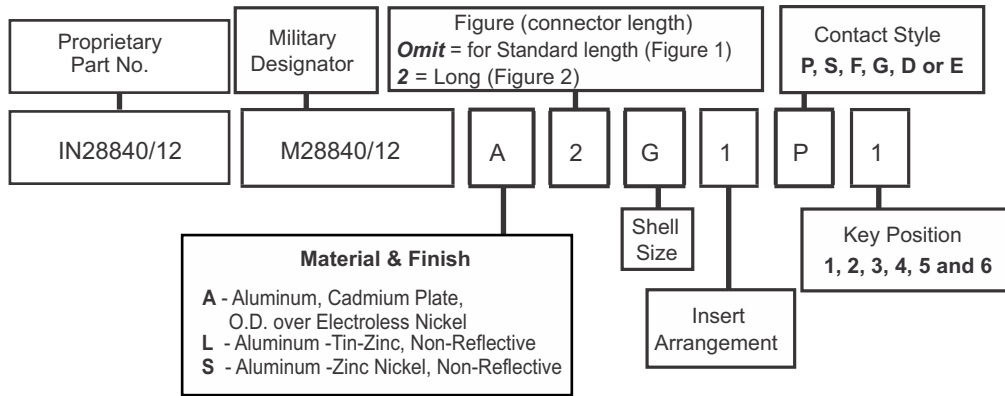
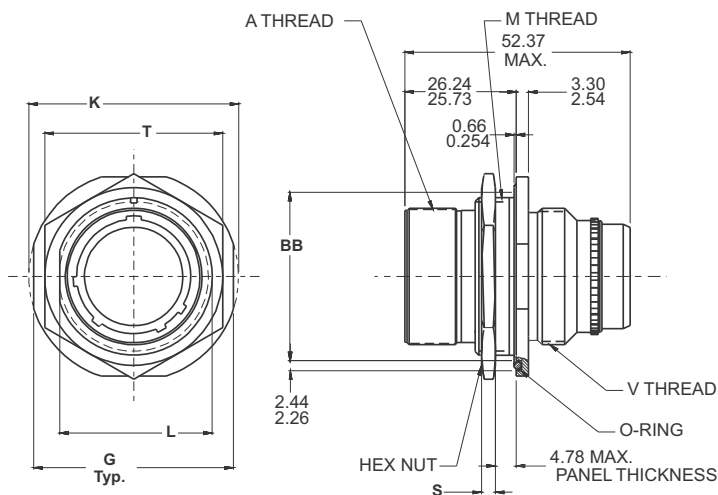
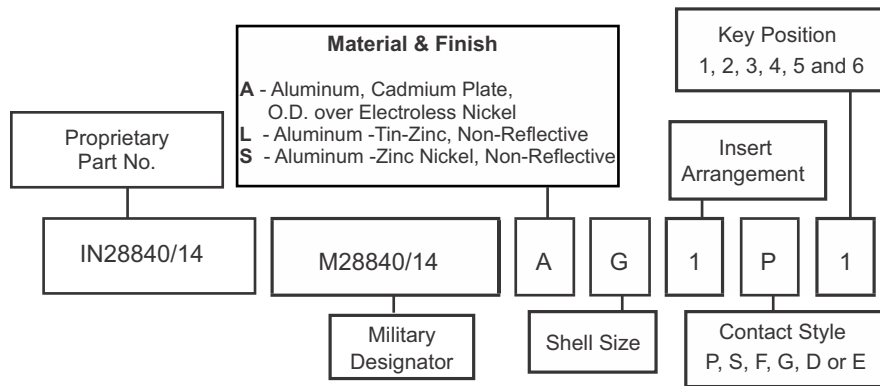


FIGURE 1
Standard, 41.28 max length

FIGURE 2
Long, 52.37 max length

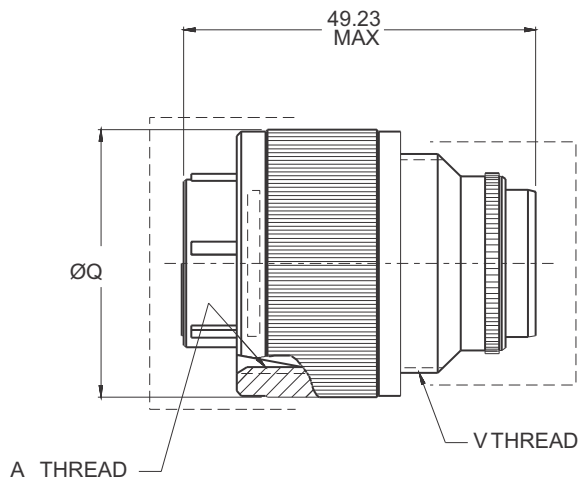
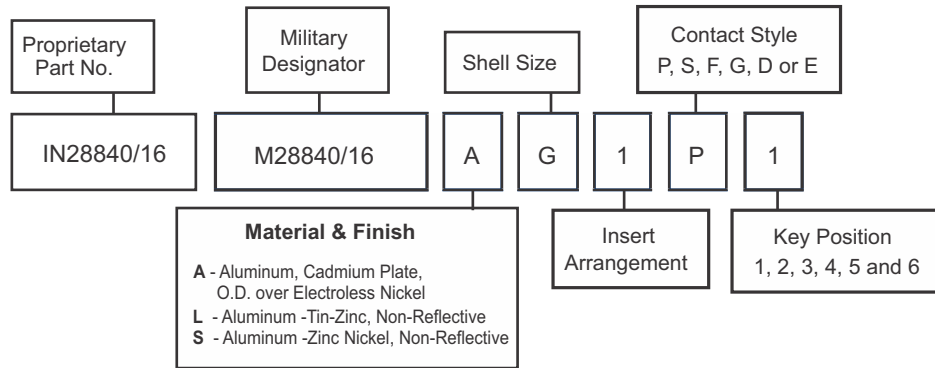
Designator	N Diameter Max	O Reference Mating Hole	R True Position Centerline to Centerline	S	T	GG Diameter Max.
A (11)	(.750) 19.05	(.812) 20.62	(.750) 19.05	(1.043) 26.49 (1.003) 25.48	(130) 3.30 (115) 2.92	(.758) 19.25
B (13)	(.875) 22.22	(.937) 23.80	(.843) 21.41	(1.158) 29.41 (1.118) 28.40		(.880) 22.35
C (15)	(1.062) 26.97	(1.124) 28.55	(.968) 24.59	(1.278) 32.46 (1.238) 31.45		(1.005) 25.53
D (17)	(1.125) 28.58	(1.187) 30.15	(1.015) 25.78	(1.403) 35.64 (1.363) 34.62		(1.130) 28.70
E (19)	(1.312) 33.32	(1.374) 34.90	(1.140) 28.96	(1.528) 38.81 (1.488) 37.80		(1.255) 31.88
F (23)	(1.500) 38.10	(1.562) 39.67	(1.281) 32.54	(1.738) 44.15 (1.698) 43.13		(1.443) 36.65
G (25)	(1.625) 41.28	(1.687) 42.85	(1.392) 35.36	(1.838) 46.69 (1.798) 45.67	(157) 3.99 (142) 3.61	(1.567) 39.80
H (29)	(1.812) 46.02	(1.874) 47.60	(1.568) 39.83	(2.158) 54.81 (2.118) 53.80		(1.880) 47.75
J (33)	(2.000) 50.80	(2.062) 52.37	(1.734) 44.04	(2.343) 59.64 (2.308) 58.62		(2.067) 52.50

Note: All dimensions are in mm (inches)



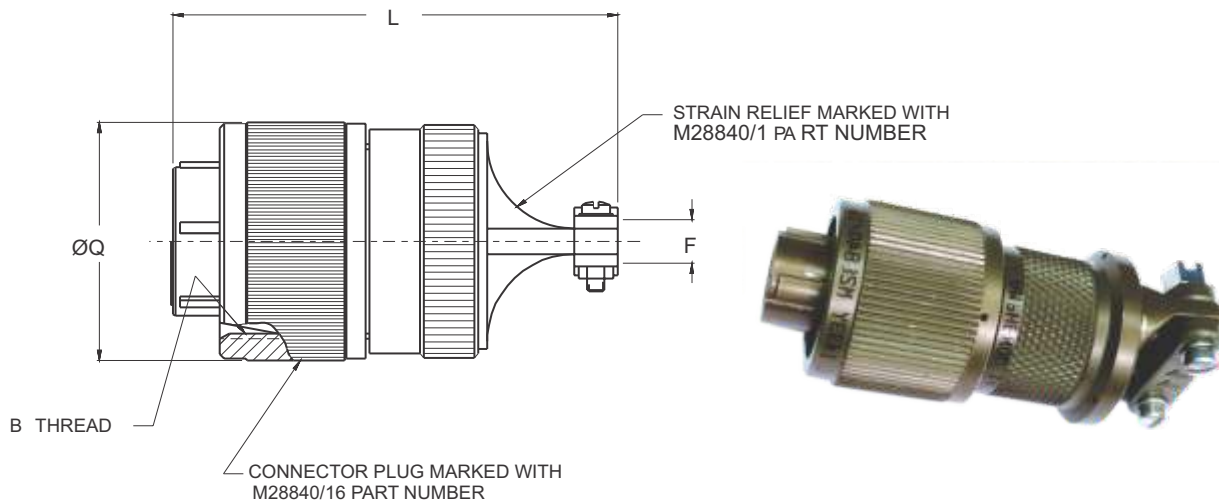
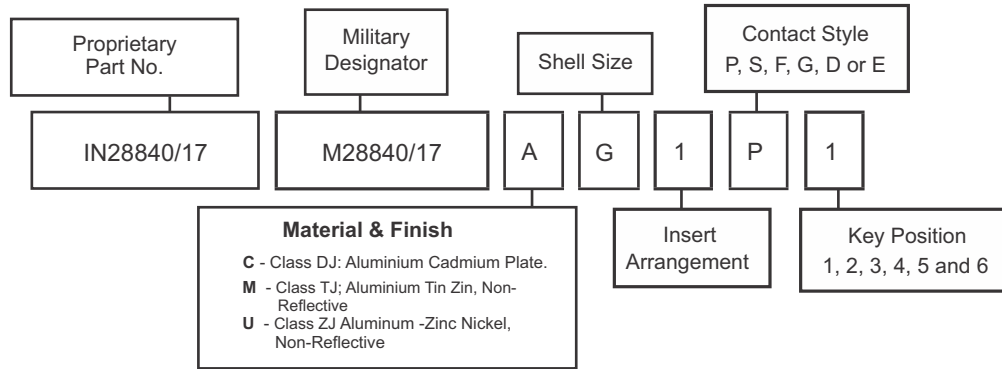
Designator	BB	G	K	L Across Flat	M Thread Class 2A	N Max.	P	R Max.	S Hex Nut Thickness	T ±.017 (0.43)
A (11)	(.979) 24.87 (.969) 24.61	(1.274) 32.36 (1.254) 31.85	(1.368) 34.75 (1.348) 34.24	(.841) 21.36 (.832) 21.13	7/8-20 UNEF	(.750) 19.05	(.890) 22.61 (.880) 22.35	(.875) 22.22	(125) 3.17	(1.062) 26.97
B (13)	(1.104) 28.04 (1.094) 27.79	(1.399) 35.53 (1.379) 35.03	(1.508) 38.30 (1.488) 37.80	(.966) 24.54 (.957) 24.31	1-20 UNEF	(.875) 22.22	(1.015) 24.78 (1.005) 25.53	(1.000) 25.40		(1.188) 30.18
C (15)	(1.292) 32.82 (1.282) 32.56	(1.587) 40.31 (1.567) 39.80	(1.681) 42.70 (1.661) 42.19	(1.156) 29.29 (1.144) 29.06	1 3/16-18 UNEF	(1.062) 26.97	(1.203) 30.56 (1.193) 30.30	(1.188) 30.18		(1.375) 34.93
D (17)	(1.354) 34.39 (1.344) 34.14	(1.649) 41.88 (1.629) 41.38	(1.743) 44.27 (1.723) 43.76	(1.216) 30.89 (1.207) 30.66	1 1/4-18 UNEF	(1.125) 28.58	(1.265) 32.13 (1.255) 31.88	(1.250) 31.75		(1.438) 36.53
E (19)	(1.542) 39.17 (1.532) 38.91	(1.837) 46.66 (1.817) 46.15	(1.931) 49.05 (1.911) 48.54	(1.403) 35.64 (1.394) 35.41	1 7/16-18 UNEF	(1.312) 33.32	(1.453) 36.91 (1.443) 36.65	(1.438) 36.52		(1.625) 41.28
F (23)	(1.729) 43.92 (1.718) 43.66	(2.024) 51.41 (2.004) 50.90	(2.118) 53.80 (2.098) 53.29	(1.591) 40.41 (1.582) 40.18	1 5/8-18 UNEF	(1.500) 8.10	(1.640) 41.66 (1.630) 41.40	(1.625) 41.28		(1.812) 46.02
G (25)	(1.854) 47.09 (1.844) 46.84	(2.149) 54.58 (2.129) 54.08	(2.243) 56.97 (2.223) 56.46	(1.716) 43.59 (1.707) 43.36	1 3/4-18 UNS	(1.625) 41.28	(1.765) 44.83 (1.755) 44.58	(1.750) 44.45	(189) 4.8	(2.000) 50.80
H (29)	(2.042) 51.87 (2.032) 51.61	(2.337) 59.36 (2.317) 58.85	(2.435) 61.85 (2.415) 61.34	(1.903) 46.34 (1.894) 48.11	1 15/16-16 UN	(1.812) 46.02	(1.953) 49.61 (1.943) 49.35	(1.938) 49.22		(2.188) 55.58
J (33)	(2.229) 56.62 (2.219) 56.36	(2.524) 64.11 (2.504) 63.60	(2.618) 66.50 (2.598) 65.99	(2.091) 53.11 (2.082) 52.88	2 1/8-16 UN	(2.000) 50.80	(2.140) 54.36 (2.130) 54.10	(2.125) 53.98		(2.375) 69.85

Note: All dimensions are in mm (inches)



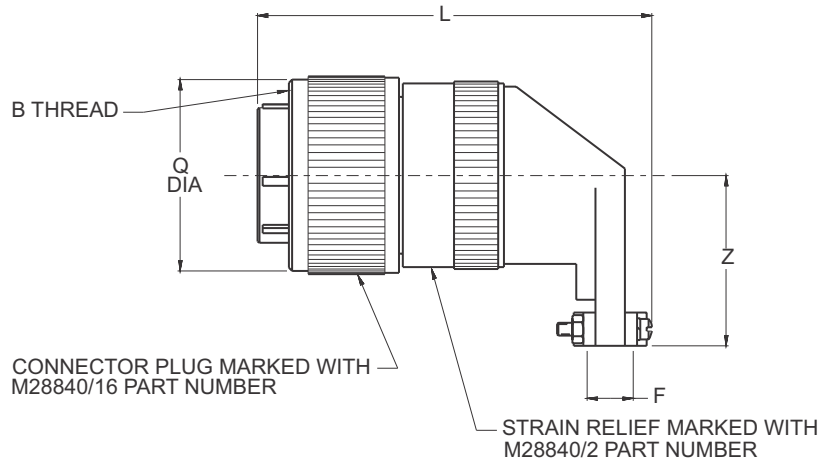
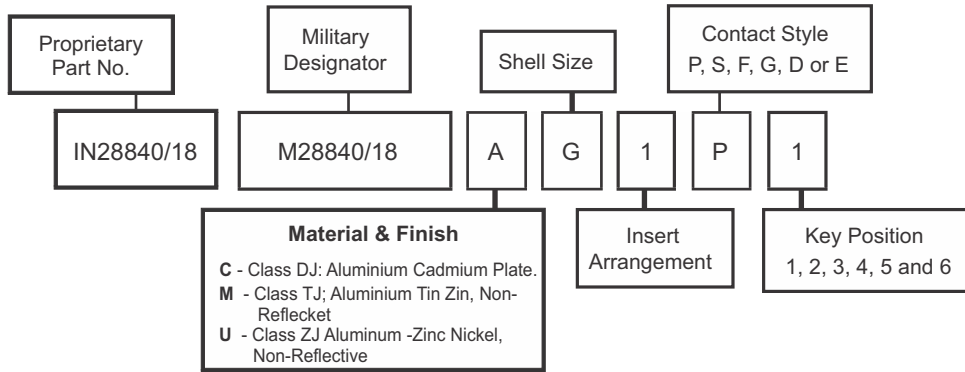
Designator	A Thread Class 2B	V Thread Class 2A	Ø Q Max.
A (11)	.750-1P-.2L-DS	3/4-20 UNEF	(1.028) 26.11
B (13)	.875-1P-.2L-DS	7/8-20 UNEF	(1.141) 28.98
C (15)	1.062-1P-.2L-DS	1-20 UNEF	(1.263) 32.08
D (17)	1.125-1P-.2L-DS	1 1/8-18 UNEF	(1.387) 35.23
E (19)	1.312-1P-.2L-DS	1 1/4-18 UNEF	(1.513) 38.43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

Note: All dimensions are in mm (inches)



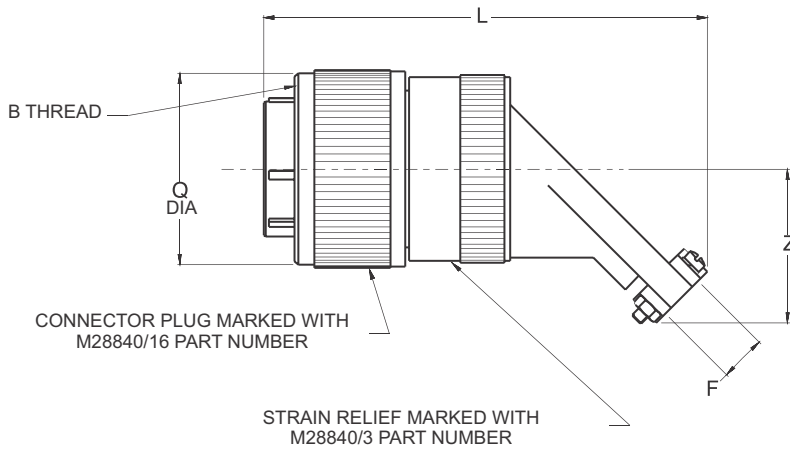
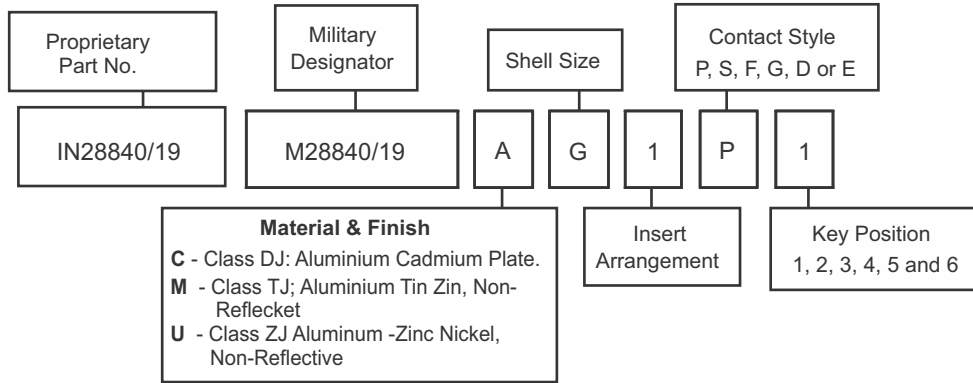
Designator	B Thread Class 2B	F Cable Entry		L Max.	Q Max.	Max. O.D. Over Rear Clamps
		Open	Closed			
A (11)	.750-1P-.2L-DS	7.26 (0.286)	4.50 (.177)	61.92 (2.438)	26.11 (1.028)	21.13 (.832)
B (13)	.875-1P-.2L-DS	7.26 (0.286)			28.98 (1.141)	
C (15)	1.062-1P-.2L-DS	10.57 (.416)	6.35 (.250)		32.10 (1.263)	25.12 (.989)
D (17)	1.125-1P-.2L-DS	12.10 (0.476)	7.39 (.291)	68.27 (2.688)	32.23 (1.387)	27.78 (1.094)
E (19)	1.312-1P-.2L-DS	15.900 (.626)	8.84 (.348)	71.42 (2.812)	38.43 (1.513)	33.50 (1.319)
F (23)	1.500-1P-.2L-DS	21.10 (.831)	10.90 (.429)	74.63 (2.938)	43.25 (1.703)	39.55 (1.557)
G (25)	1.625-1P-.2L-DS	24.28 (.956)	13.28 (.523)	77.78 (3.062)	46.36 (1.825)	41.99 (1.653)
H (29)	1.812-1P-.2L-DS	27.45 (1.081)	16.33 (.643)	80.98 (3.188)	54.43 (2.143)	46.20 (1.819)
J (33)	2.000-1P-.2L-DS	30.15 (1.187)	17.88 (.704)	85.73 (3.375)	59.16 (2.329)	51.31(2.020)

Note: All dimensions are in mm (inches)



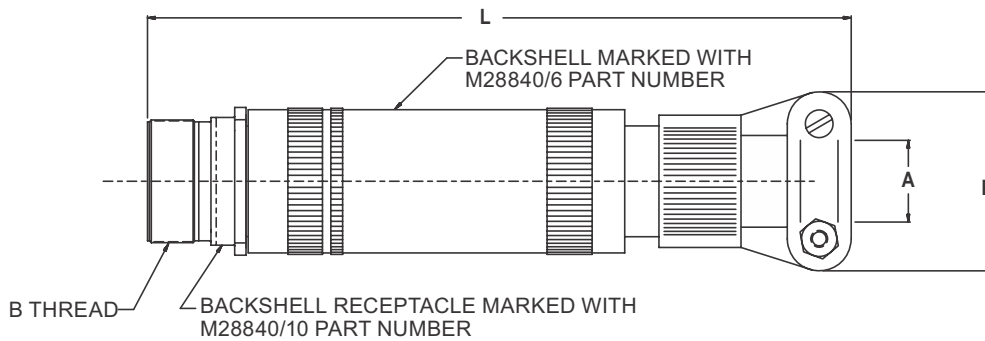
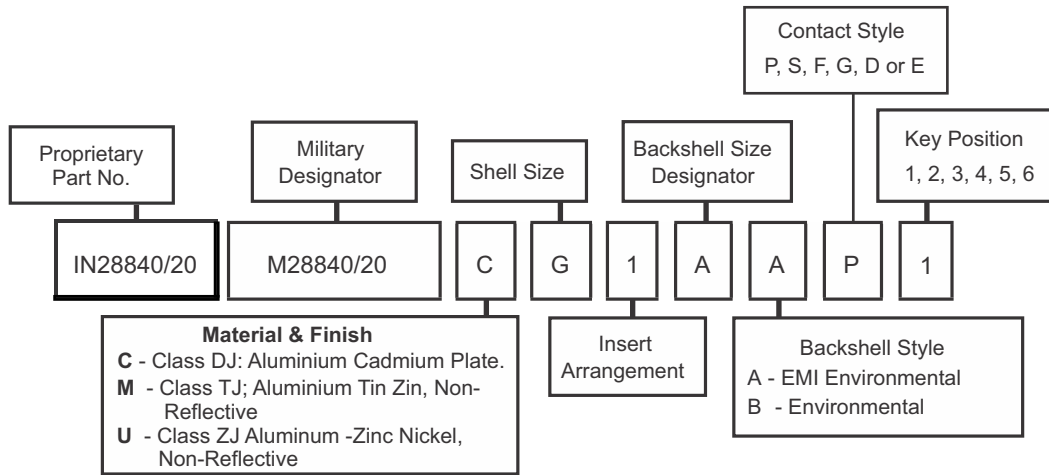
Designator	B Thread Class 2B	F Cable Entry		L Max.	Q Max.	Z Max.	Max. O.D. Over Rear Clamps
		Open	Closed				
A (11)	.750-1P-.2L-DS	(.286) 7.26	(.177) 4.49	(2.562) 65.07	(1.028) 26.11	(.929) 23.60	(.832) 21.11
B (13)	.875-1P-.2L-DS	(.286) 7.26					
C (15)	1.062-1P-.2L-DS	(.416) 10.56	(.250) 6.35	(2.750) 69.85	(1.263) 32.08	(1.056) 26.32	(.989) 25.12
D (17)	1.125-1P-.2L-DS	(.476) 12.09	(.291) 7.39	(2.875) 73.02	(1.387) 35.23	(1.233) 37.32	(1.094) 27.79
E (19)	1.312-1P-.2L-DS	(.626) 15.90	(.348) 8.83	(3.000) 76.2	(1.513) 38.43	(1.296) 32.92	(1.319) 33.50
F (23)	1.500-1P-.2L-DS	(.831) 21.10	(.429) 10.89	(3.125) 79.37	(1.703) 43.25	(1.358) 34.49	(1.557) 39.55
G (25)	1.625-1P-.2L-DS	(.956) 24.28	(.523) 13.28	(3.250) 82.55	(1.825) 46.25	(1.420) 36.07	(1.653) 41.99
H (29)	1.812-1P-.2L-DS	(1.081) 27.45	(.643) 16.33	(3.375) 85.72	(2.143) 54.43	(1.634) 41.50	(1.819) 46.20
J (33)	2.000-1P-.2L-DS	(1.187) 30.14	(.704) 17.88	(3.438) 87.32	(2.329) 59.15	(1.859) 47.22	(2.020) 51.31

Note: All dimensions are in mm (inches)



Designator	B Thread Class 2B	F Cable Entry		L Max.	Q Max.	Z Max.	Max. O.D. Over Rear Clamps
		Open	Closed				
A (11)	.750-1P-.2L-DS	(.286) 7.26	(.177) 4.49	(3.125) 79.73	(1.028) 26.11	(.928) 23.57	(.832) 21.13
B (13)	.875-1P-.2L-DS	(.286) 7.26		(3.125) 75.37	(1.141) 28.98	(.928) 23.57	
C (15)	1.062-1P-.2L-DS	(.416) 10.56	(.250) 6.35	(3.250) 82.55	(1.263) 32.08	(.991) 25.17	(.989) 25.12
D (17)	1.125-1P-.2L-DS	(.476) 12.09	(.291) 7.39	(3.312) 84.12	(1.387) 35.22	(1.110) 28.19	(1.094) 27.78
E (19)	1.312-1P-.2L-DS	(.626) 15.90	(.348) 8.83	(3.375) 85.725	(1.513) 38.43	(1.172) 29.76	(1.319) 33.50
F (23)	1.500-1P-.2L-DS	(.831) 21.10	(.429) 10.89	(3.438) 87.32	(1.703) 43.25	(1.235) 31.39	(1.557) 39.54
G (25)	1.625-1P-.2L-DS	(.956) 24.28	(.523) 13.28	(3.500) 88.9	(1.825) 46.35	(1.297) 32.94	(1.653) 41.98
H (29)	1.812-1P-.2L-DS	(1.081) 27.45	(.643) 16.33	(3.750) 95.25	(2.143) 54.43	(1.543) 39.19	(1.819) 46.20
J (33)	2.000-1P-.2L-DS	(1.187) 30.14	(.704) 17.88	(3.875) 98.425	(2.329) 59.15	(1.668) 42.36	(2.020) 51.30

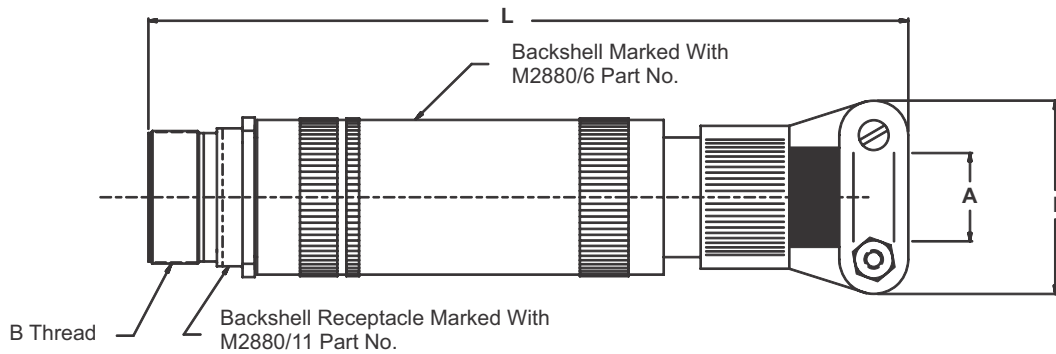
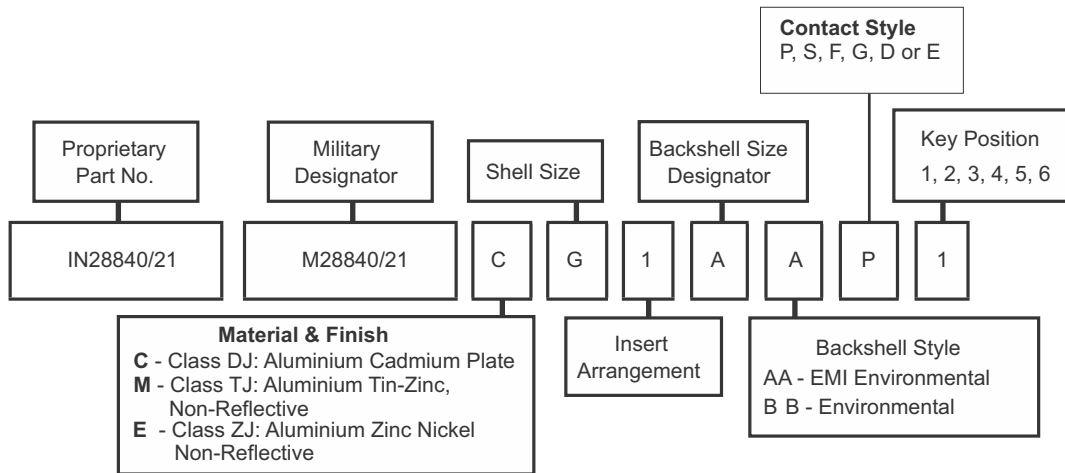
Note: All dimensions are in mm (inches)



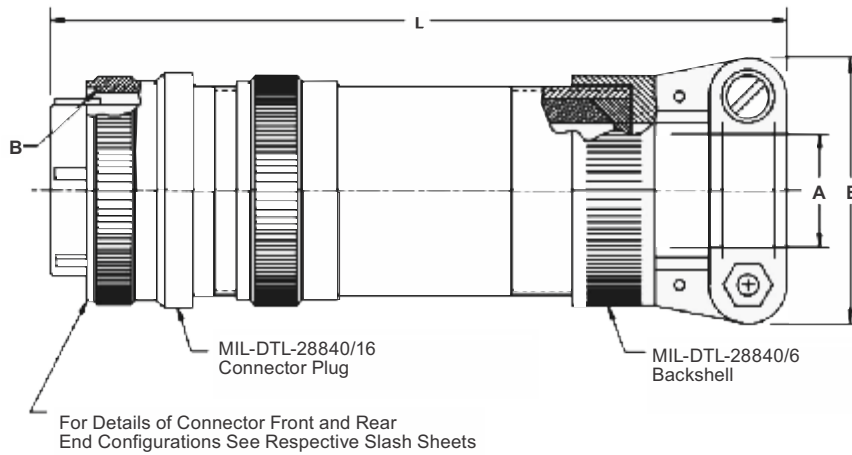
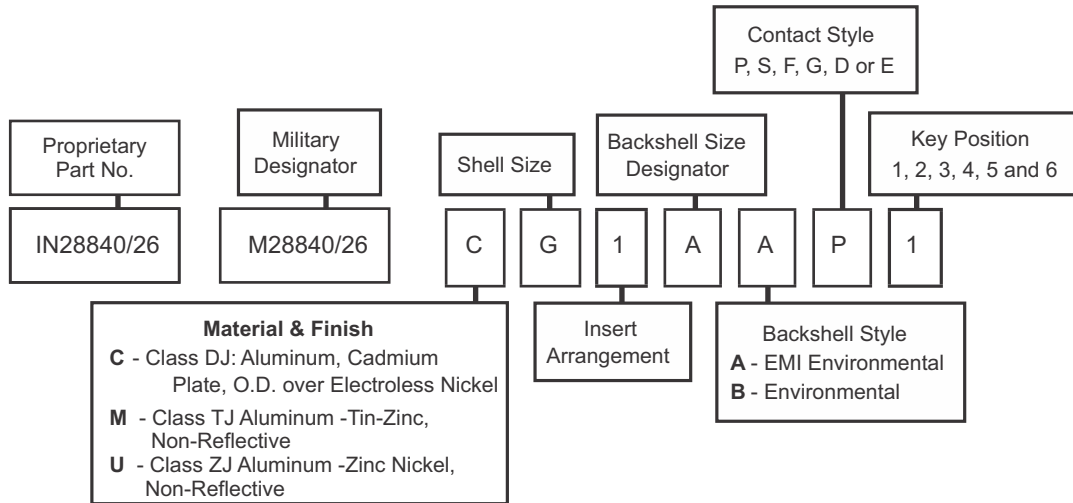
Note: All dimensions are in mm (inches)

Military Shell Size	Shell Size	Backshell Size Designator	A Cable Entry		B Thread Class 2B	E Max.	L Max.
			Open	Closed			
A	11	A	(.312) 7.92	(.188) 4.77	.750-1P-.2L-DS	(.938) 23.82	(6.625) 168.27
A	11	B	(.438) 11.12	(.281) 7.13		(1.125) 31.75	(6.625) 168.27
A	11	C	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(6.625) 168.27
B	13	A	(.312) 7.92	(.188) 4.77	.875-1P-.2L-DS	(.938) 23.82	(6.625) 168.27
B	13	B	(.438) 11.12	(.281) 7.13		(1.125) 31.75	(6.625) 168.27
B	13	C	(.562) 14.27	(.344) 8.79		(1.312) 33.32	(6.625) 168.27
B	13	D	(.652) 16.546	(.375) 9.52		(1.312) 33.32	(7.125) 184.15
C	15	A	(.438) 11.12	(.281) 7.13	1.062-1P-.2L-DS	(1.125) 31.75	(6.625) 168.27
C	15	B	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(6.625) 168.27
C	15	C	(.625) 15.87	(.375) 9.52		(1.312) 33.32	(7.125) 180.97
C	15	D	(.750) 19.05	(.438) 11.12		(1.593) 40.46	(7.188) 182.57
C	15	E	(.312) 7.92	(.188) 4.77		(.938) 23.82	(6.625) 168.27
D	17	A	(.625) 16.56	(.375) 9.52	1.125-1P-.2L-DS	(1.312) 33.32	(7.125) 180.97
D	17	B	(.750) 19.05	(.438) 11.12		(1.593) 40.46	(7.188) 182.57
D	17	C	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(7.188) 182.57
E	19	A	(.625) 15.82	(.375) 9.52	1.312-1P-.2L-DS	(1.312) 33.32	(7.125) 180.97
E	19	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(7.250) 184.15
F	23	A	(.750) 19.05	(.438) 11.12	1.500-1P-.2L-DS	(1.593) 40.46	(7.688) 195.27
F	23	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(7.812) 198.42
F	23	C	(1.188) 30.17	(.812) 20.62		(2.093) 53.28	(7.938) 201.62
G	25	A	(.938) 23.82	(.625) 15.87	1.625-1P-.2L-DS	(1.750) 44.45	(7.750) 196.85
G	25	B	(1.188) 30.17	(.812) 20.62		(2.093) 53.28	(8.438) 214.32
G	25	C	(1.250) 31.75	(.875) 22.22		(2.093) 53.28	(8.438) 214.32
G	25	D	(1.380) 95.05	(1.000) 25.4		(2.343) 59.51	(8.500) 215.9
H	29	A	(1.188) 30.17	(.812) 20.62	1.812-1P-.2L-DS	(2.093) 53.28	(8.438) 214.32
H	29	B	(1.380) 35.05	(1.000) 25.4		(2.343) 59.51	(8.500) 215.9
J	33	A	(1.380) 35.05	(1.000) 25.4	2.000-1P-.2L-DS	(2.343) 59.51	(8.500) 215.9
J	33	B	(1.625) 41.27	(1.250) 31.75		(2.750) 69.85	(8.750) 222.25

Note: All dimensions are in mm (inches)



Note: All dimensions are in mm (inches)



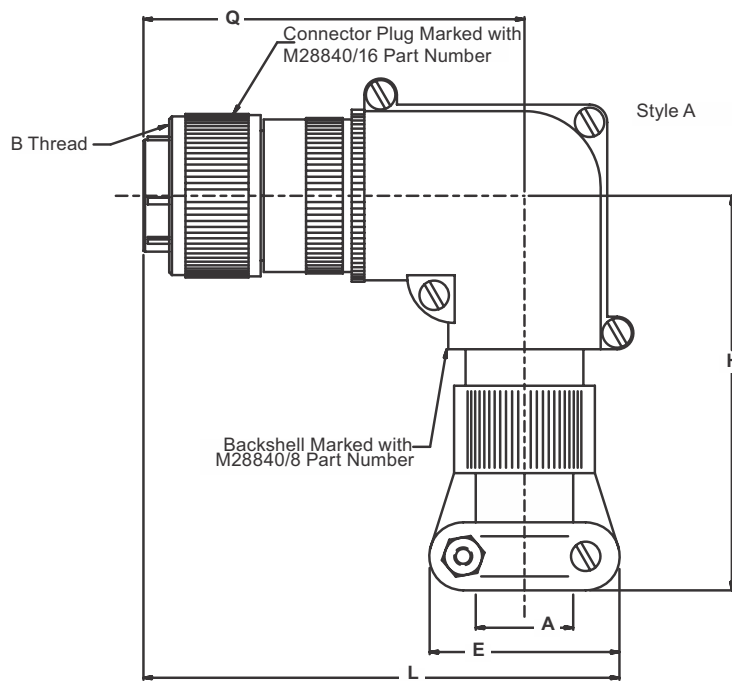
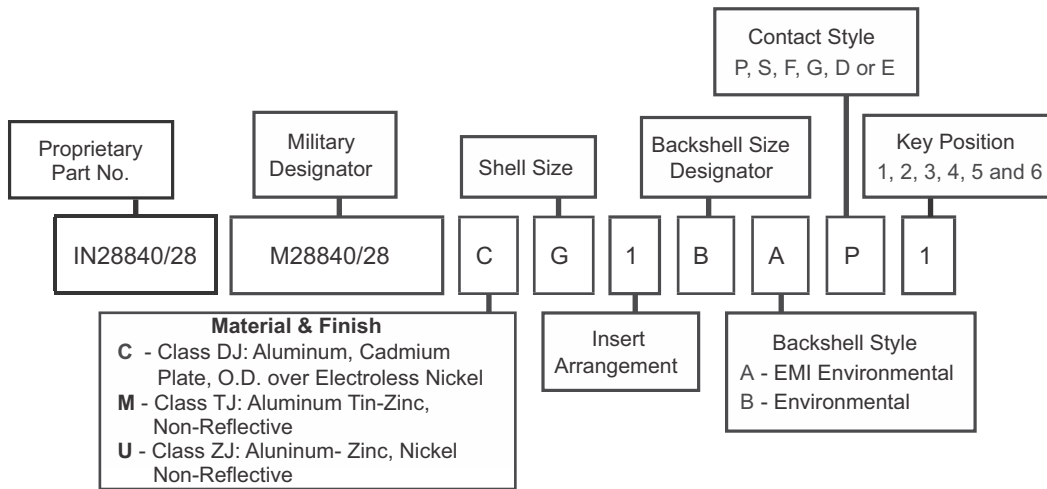
Note: All dimensions are in mm (inches)

Military Shell Size	Shell Size	Backshell Size Designator	A Cable Entry		B Thread Class 2B	E Max.	L Max.
			Open	Closed			
A	11	A	(.312) 7.92	(.188) 4.77	.750-1P-.2L-DS	(.938) 23.82	(6.625) 168.27
A	11	B	(.438) 11.12	(.281) 7.13		(1.125) 31.75	(6.625) 168.27
A	11	C	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(6.625) 168.27
B	13	A	(.312) 7.92	(.188) 4.77	.875-1P-.2L-DS	(.938) 23.82	(6.625) 168.27
B	13	B	(.438) 11.12	(.281) 7.13		(1.125) 31.75	(6.625) 168.27
B	13	C	(.562) 14.27	(.344) 8.79		(1.312) 33.32	(6.625) 168.27
B	13	D	(.652) 16.546	(.375) 9.52		(1.312) 33.32	(7.125) 184.15
C	15	A	(.438) 11.12	(.281) 7.13	1.062-1P-.2L-DS	(1.125) 31.75	(6.625) 168.27
C	15	B	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(6.625) 168.27
C	15	C	(.625) 15.87	(.375) 9.52		(1.312) 33.32	(7.125) 180.97
C	15	D	(.750) 19.05	(.438) 11.12		(1.593) 40.46	(7.188) 182.57
C	15	E	(.312) 7.92	(.188) 4.77		(.938) 23.82	(6.625) 168.27
D	17	A	(.625) 16.56	(.375) 9.52	1.125-1P-.2L-DS	(1.312) 33.32	(7.125) 180.97
D	17	B	(.750) 19.05	(.438) 11.12		(1.593) 40.46	(7.188) 182.57
D	17	C	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(7.188) 182.57
E	19	A	(.625) 15.82	(.375) 9.52	1.312-1P-.2L-DS	(1.312) 33.32	(7.125) 180.97
E	19	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(7.250) 184.15
F	23	A	(.750) 19.05	(.438) 11.12	1.500-1P-.2L-DS	(1.593) 40.46	(7.688) 195.27
F	23	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(7.812) 198.42
F	23	C	(1.188) 30.17	(.812) 20.62		(2.093) 53.28	(7.938) 201.62
G	25	A	(.938) 23.82	(.625) 15.87	1.625-1P-.2L-DS	(1.750) 44.45	(7.750) 196.85
G	25	B	(1.188) 30.17	(.812) 20.62		(2.093) 53.28	(8.438) 214.32
G	25	C	(1.250) 31.75	(.875) 22.22		(2.093) 53.28	(8.438) 214.32
G	25	D	(1.380) 35.05	(1.000) 25.4		(2.343) 59.51	(8.500) 215.9
H	29	A	(1.188) 30.17	(.812) 20.62	1.812-1P-.2L-DS	(2.093) 53.28	(8.438) 214.32
H	29	B	(1.380) 35.05	(1.000) 25.4		(2.343) 59.51	(8.500) 215.9
J	33	A	(1.380) 35.05	(1.000) 25.4	2.000-1P-.2L-DS	(2.343) 59.51	(8.500) 215.9
J	33	B	(1.625) 41.27	(1.250) 31.75		(2.750) 69.85	(8.750) 222.25

Note: All dimensions are in mm (inches)

Military Shell Size	Shell Size	B Thread Class 2B	Backshell Size Designator	A Cable Entry		E Max.	L Max.
				Open	Closed		
A	11	.750-1P-.2L-DS	A	(.312) 7.92	(.188) 4.77	(.938) 23.82	(6.500) 165.1
			B	(.438) 11.12	(.281) 7.13	(1.175) 28.57	
			C	(.562) 14.27	(.344) 8.73	(1.312) 33.32	
B	13	.875-1P-.2L-DS	A	(.312) 7.92	(.188) 4.77	(.938) 23.82	(7.000) 177.8
			B	(.438) 11.12	(.281) 7.13	(1.125) 28.57	
			C	(.562) 14.27	(.344) 8.73	(1.312) 33.32	
			D	(.652) 16.56	(.375) 9.52	(1.312) 33.32	
C	15	1.062-1P-.2L-DS	A	(.438) 11.12	(.281) 7.13	(1.125) 28.57	(7.000) 177.8
			B	(.562) 14.27	(.347) 8.73	(1.312) 33.32	
			C	(.625) 15.87	(.375) 9.52	(1.312) 33.32	
			D	(.750) 19.05	(.438) 11.12	(1.593) 40.46	
			E	(.312) 7.92	(.188) 4.77	(0.938) 23.82	
D	17	1.125-1P-.2L-DS	A	(.625) 15.87	(.375) 9.52	(1.312) 33.32	(7.500) 190.5
			B	(.750) 19.05	(.438) 11.12	(1.595) 40.46	
			C	(.938) 23.82	(.625) 15.87	(1.750) 44.45	
E	19	1.312-1P-.2L-DS	A	(.625) 15.87	(.375) 9.52	(1.312) 33.32	(7.625) 193.67
			B	(.938) 23.82	(.625) 15.87	(1.730) 44.15	
F	23	1.500-1P-.2L-DS	A	(.750) 19.05	(.438) 11.12	(1.593) 40.46	(7.812) 193.42
			B	(.938) 23.82	(.625) 15.87	(1.750) 44.45	
			C	(1.188) 30.17	(.812) 20.62	(2.093) 53.16	
G	25	1.625-1P-.2L-DS	A	(.938) 23.82	(.625) 15.87	(1.750) 44.45	(8.312) 211.12
			B	(1.188) 30.17	(.812) 20.62	(2.093) 53.16	
			C	(1.250) 31.75	(.875) 22.22	(2.093) 53.16	
			D	(1.380) 35.05	(1.00) 25.4	(2.343) 59.51	
H	29	1.812-1P-.2L-DS	A	(1.188) 30.17	(.812) 20.62	(2.093) 53.16	(8.625) 219.8
			B	(1.380) 35.05	(1.00) 25.4	(2.343) 59.51	
J	33	2.000-1P-.2L-DS	A	(1.380) 35.05	(1.00) 25.4	(2.343) 59.51	(8.625) 219.8
			B	(1.625) 41.27	(1.256) 31.75	(2.750) 69.85	

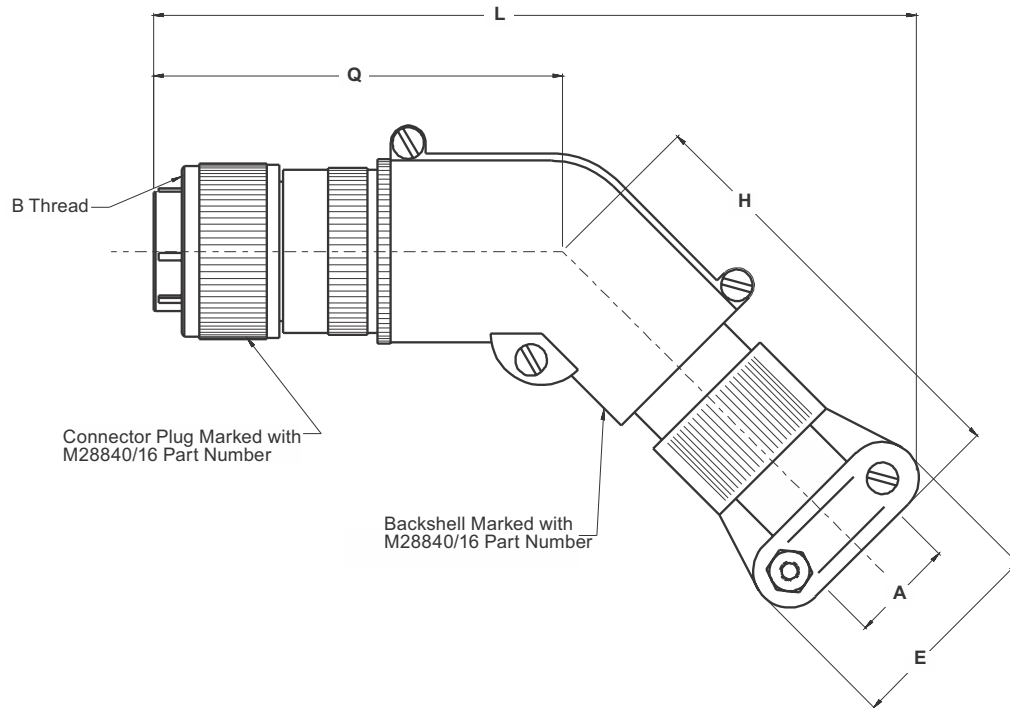
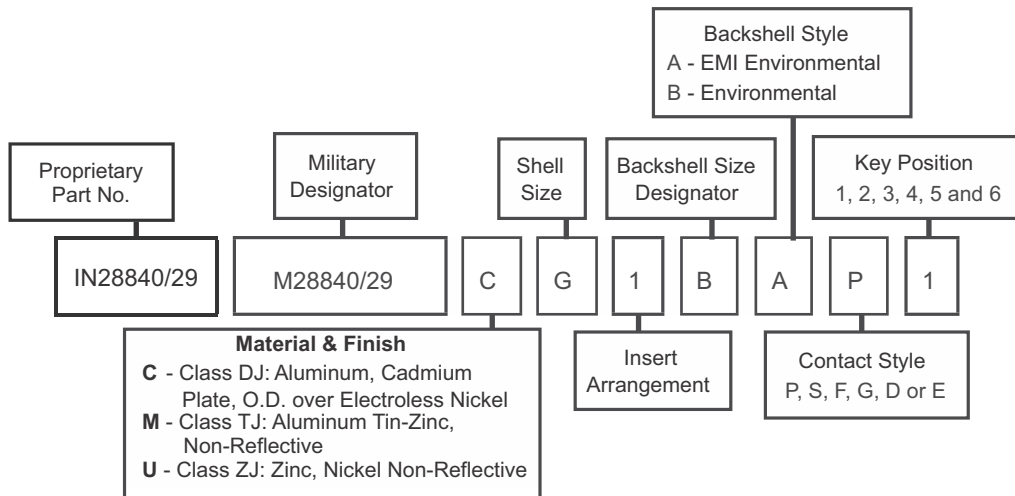
Note: All dimensions are in mm (inches)



Note: All dimensions are in mm (inches)

Military Shell Size	Shell Size	Backshell Size Designator	A Cable Entry		B Thread Class 2B	E Max.	H Max.	L Max.	Q Max.
			Open	Closed					
A	11	A	(.312) 7.92	(.188) 4.77	.750-1P-.2L-DS	(.938) 23.82	(5.332) 135.43	(3.812) 96.82	(3.250) 82.55
A	11	B	(.438) 11.12	(.281) 7.13		(1.125) 28.57	(5.332) 135.43	(3.812) 96.82	(3.250) 82.55
A	11	C	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(5.457) 138.60	(4.000) 101.6	(3.375) 85.72
B	13	A	(.438) 11.25	(.281) 7.13	.875-1P-.2L-DS	(1.125) 28.57	(5.332) 135.43	(3.812) 96.82	(3.250) 82.55
B	13	B	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(5.457) 138.60	(4.000) 101.6	(3.375) 82.72
B	13	C	(.625) 16.56	(.375) 9.52		(1.312) 33.32	(5.682) 144.32	(4.250) 107.95	(3.500) 88.9
C	15	A	(.438) 11.25	(.281) 7.13	1.062-1P-.2L-DS	(1.125) 28.57	(5.457) 138.60	(4.000) 101.6	(3.375) 85.72
C	15	B	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(5.457) 138.60	(4.000) 101.6	(3.375) 85.72
C	15	C	(.625) 16.56	(.375) 9.52		(1.312) 33.32	(5.682) 114.32	(4.250) 107.95	(3.500) 98.9
C	15	D	(.750) 19.05	(.438) 11.12		(1.593) 40.46	(5.713) 145.11	(4.150) 104.77	(3.500) 88.9
D	17	A	(.625) 16.56	(.375) 9.52	1.125-1P-.2L-DS	(1.312) 33.32	(5.682) 144.32	(4.250) 107.95	(3.500) 88.9
D	17	B	(.750) 19.05	(.438) 11.12		(1.593) 40.46	(5.713) 145.11	(4.250) 107.95	(3.500) 88.9
E	19	A	(.625) 16.56	(.375) 9.52	1.312-1P-.2L-DS	(1.312) 33.32	(5.682) 144.32	(4.250) 107.95	(3.500) 88.9
E	19	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(5.832) 148.13	(4.375) 111.12	(3.625) 92.07
F	23	A	(.750) 19.05	(.438) 11.12	1.500-1P-.2L-DS	(1.593) 40.46	(5.713) 145.74	(4.500) 114.3	(3.625) 92.07
F	23	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(5.832) 148.13	(4.500) 114.3	(3.625) 92.07
F	23	C	(1.188) 30.17	(.812) 20.62		(2.093) 53.16	(6.019) 152.88	(4.688) 119.07	(3.625) 92.07
G	25	A	(.938) 23.82	(.625) 15.87	1.625-1P-.2L-DS	(1.750) 44.45	(5.832) 148.13	(4.500) 114.3	(3.625) 92.07
G	25	B	(1.188) 30.17	(.812) 20.62		(2.093) 53.16	(6.019) 152.88	(4.688) 119.07	(3.625) 92.07
G	25	C	(1.250) 31.75	(.875) 22.22		(2.093) 53.16	(6.144) 156.05	(4.688) 119.07	(3.750) 95.25
G	25	D	(1.380) 35.05	(1.000) 25.4		(2.343) 59.51	(6.176) 156.87	(4.938) 125.42	(3.750) 95.25
H	29	A	(1.188) 30.17	(.812) 20.62	1.812-1P-.2L-DS	(2.093) 53.16	(6.144) 156.05	(4.812) 122.22	(3.750) 95.25
H	29	B	(1.380) 35.05	(1.000) 25.4		(2.343) 59.51	(6.176) 156.87	(4.938) 125.42	(3.750) 95.25
J	33	A	(1.380) 35.05	(1.000) 25.4	2.000-1P-.2L-DS	(2.343) 59.51	(6.426) 163.22	(5.188) 131.77	(4.000) 101.6
J	33	B	(1.625) 41.27	(1.250) 31.75		(2.750) 69.85	(6.701) 170.20	(5.375) 136.52	(4.000) 101.6

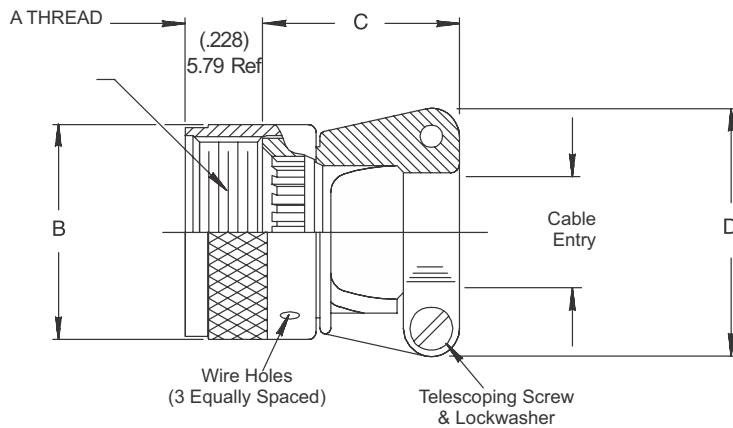
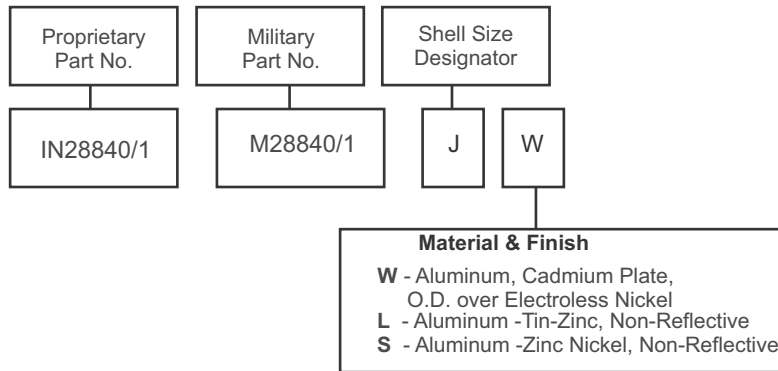
Note: All dimensions are in mm (inches)



Note: All dimensions are in mm (inches)

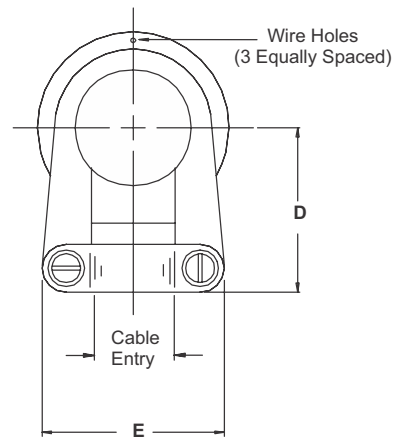
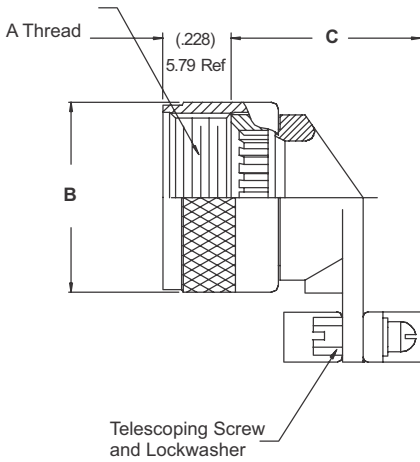
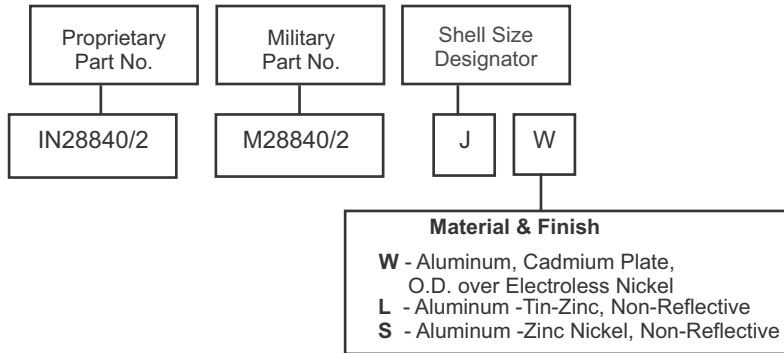
Military Shell Size	Shell Size	Backshell Size Designator	A Cable Entry		B Thread Class 2B	E Max.	H Max.	L Max.	Q Max.
			Open	Closed					
A	11	A	(.312) 7.92	(.188) 4.77	.750-1P-.2L-DS	(.938) 23.82	(5.432) 137.97	(7.404) 188.06	(3.250) 82.55
A	11	B	(.438) 11.12	(.281) 7.13		(1.125) 28.57	(5.432) 137.97	(7.457) 188.40	(3.250) 82.55
A	11	C	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(5.557) 141.14	(7.727) 196.26	(3.375) 85.72
B	13	A	(.438) 11.12	(.281) 7.13	.875-1P-.2L-DS	(1.125) 28.57	(5.432) 137.97	(7.457) 189.40	(3.250) 82.55
B	13	B	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(5.557) 141.14	(7.727) 196.26	(3.375) 85.72
B	13	C	(.625) 16.56	(.375) 9.52		(1.312) 33.32	(5.682) 144.32	(7.938) 201.62	(3.500) 88.9
C	15	A	(.438) 11.12	(.281) 7.13	1.062-1P-.2L-DS	(1.125) 28.57	(5.557) 141.14	(7.671) 194.84	(3.375) 85.72
C	15	B	(.562) 14.27	(.344) 8.73		(1.312) 33.32	(5.557) 141.14	(7.727) 196.26	(3.375) 85.72
C	15	C	(.625) 14.56	(.375) 9.52		(1.312) 33.32	(5.682) 144.32	(7.938) 201.62	(3.500) 88.9
C	15	D	(.750) 19.05	(.438) 11.12	1.125-1P-.2L-DS	(1.593) 40.46	(5.713) 145.11	(8.058) 204.67	(3.500) 88.9
D	17	A	(.625) 14.56	(.375) 9.52		(1.312) 33.32	(5.682) 144.32	(7.938) 201.62	(3.500) 88.9
D	17	B	(.750) 19.05	(.438) 11.12		(1.593) 40.46	(5.713) 145.11	(8.058) 204.67	(3.500) 88.9
E	19	A	(.625) 14.56	(.375) 9.52	1.312-1P-.2L-DS	(1.312) 33.32	(5.682) 144.32	(7.938) 201.62	(3.500) 88.9
E	19	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(5.932) 150.67	(8.371) 212.62	(3.625) 92.07
F	23	A	(.750) 19.05	(.438) 11.12	1.500-1P-.2L-DS	(1.593) 40.46	(5.838) 148.28	(8.272) 210.10	(3.625) 92.07
F	23	B	(.938) 23.82	(.625) 15.87		(1.750) 44.45	(5.932) 150.67	(8.371) 212.62	(3.625) 92.07
F	23	C	(1.188) 30.17	(.812) 20.62		(2.093) 53.16	(6.119) 155.42	(8.628) 219.15	(3.625) 92.07
G	25	A	(.938) 23.82	(.625) 15.87	1.625-1P-.2L-DS	(1.750) 44.45	(5.932) 150.67	(8.371) 212.62	(3.625) 92.07
G	25	B	(1.188) 30.17	(.812) 20.62		(2.093) 53.16	(6.119) 155.42	(8.628) 219.15	(3.625) 92.07
G	25	C	(1.250) 31.75	(.872) 22.22		(2.093) 53.16	(6.244) 158.59	(8.841) 224.56	(3.750) 95.25
G	25	D	(1.380) 35.05	(1.000) 25.4		(2.343) 59.51	(6.276) 159.41	(8.950) 227.33	(3.750) 95.25
H	29	A	(1.188) 30.17	(.812) 20.62	1.812-1P-.2L-DS	(2.093) 53.16	(6.244) 158.59	(8.841) 224.56	(3.750) 95.25
H	29	B	(1.380) 35.05	(1.000) 25.4		(2.343) 59.51	(6.276) 159.41	(8.950) 227.33	(3.750) 95.25
J	33	A	(1.380) 35.05	(1.000) 25.4	2.000-1P-.2L-DS	(2.343) 59.51	(6.526) 165.76	(9.377) 238.17	(4.000) 101.6
J	33	B	(1.625) 41.27	(1.250) 31.75		(2.750) 69.85	(6.801) 172.74	(9.659) 245.33	(4.000) 101.6

Note: All dimensions are in mm (inches).



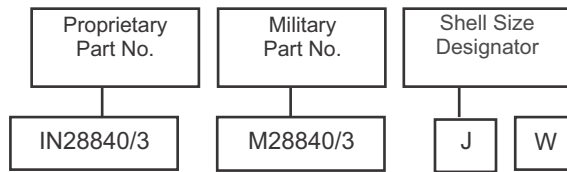
Designator	A Thread Class 2B	B Max. Diameter	C Max.	D Max.	Screw Size Ref.	Cable Entry	
						Min.	Max.
A (11)	.750-20 UNEF	(1.028) 26.11	(1.091) 27.71	(.903) 2.94	.114-40	(.177) 4.50	(.286) 7.26
B (13)	.875-20 UNEF	(1.141) 28.98	(1.091) 27.71	(.977) 24.82	.114-40	(.177) 4.50	(.286) 7.26
C (15)	1.000-20 UNEF	(1.263) 32.08	(1.091) 27.71	(1.151) 29.24	.114-40	(.250) 6.35	(.416) 10.57
D (17)	1.125-18 UNEF	(1.387) 35.23	(1.206) 30.63	(1.281) 32.54	.114-40	(.291) 7.39	(.476) 12.09
E (19)	1.250-18 UNEF	(1.513) 38.43	(1.320) 33.53	(1.406) 35.71	.114-40	(.348) 8.84	(.626) 15.90
F (23)	1.438-18 UNEF	(1.703) 43.26	(1.445) 36.70	(1.576) 40.03	.134-32	(.429) 10.90	(.831) 21.11
G (25)	1.562-18 UNEF	(1.825) 46.36	(1.570) 39.88	(1.666) 42.32	.134-32	(.523) 13.28	(.956) 24.28
H (29)	1.875-16 UN	(2.143) 54.43	(1.721) 43.71	(2.046) 51.97	.134-32	(.643) 16.33	(1.081) 27.46
J (33)	2.062-16 UNS	(2.329) 59.16	(1.908) 48.46	(2.209) 56.11	.162-32	(.704) 17.88	(1.187) 30.15

Note: All Dimensions for reference only.
All dimensions are in mm (inches)

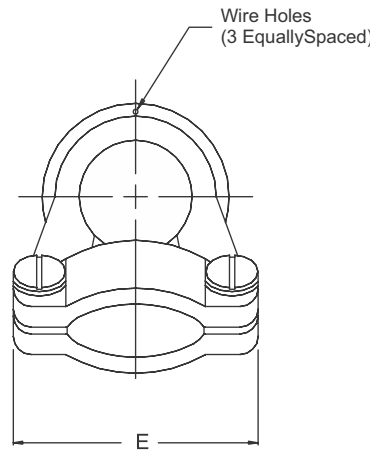
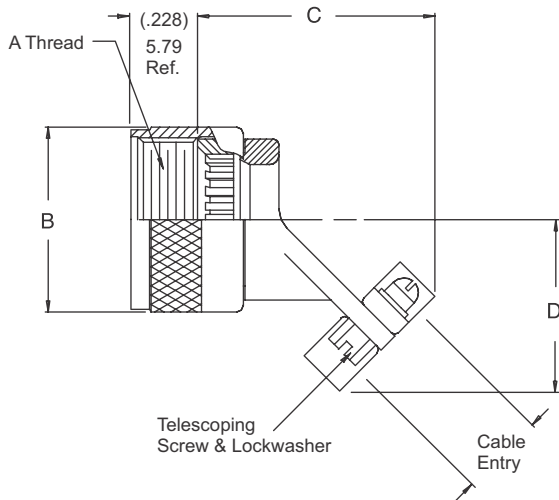


Designator	A Thread Class 2B	B Max. Diameter	C Max.	D Max.	E Max.	Screw Size Ref.	Cable Entry	
							Min.	Max.
A (11)	.750-20 UNEF	(1.028) 26.11	(1.071) 27.20	(.929) 23.60	(.903) 22.94	.114-40	(.177) 4.50	(.286) 7.26
B (13)	.875-20 UNEF	(1.141) 28.98	(1.071) 27.20	(.929) 23.60	(.977) 24.82	.114-40	(.177) 4.50	(.286) 7.26
C (15)	1.000-20 UNEF	(1.263) 32.08	(1.280) 32.51	(1.056) 26.82	(1.151) 29.24	.114-40	(.250) 6.35	(.416) 10.57
D (17)	1.125-18 UNEF	(1.387) 35.23	(1.392) 35.36	(1.233) 31.32	(1.281) 32.54	.114-40	(.291) 7.39	(.476) 12.09
E (19)	1.250-18 UNEF	(1.513) 38.43	(1.517) 38.53	(1.296) 32.92	(1.406) 35.71	.114-40	(.348) 8.84	(.626) 15.90
F (23)	1.438-18 UNEF	(1.703) 43.26	(1.642) 41.71	(1.358) 34.49	(1.576) 40.03	.134-32	(.429) 10.90	(.831) 21.11
G (25)	1.562-18 UNEF	(1.825) 46.36	(1.767) 44.88	(1.420) 36.07	(1.666) 42.32	.134-32	(.523) 13.28	(.956) 24.28
H (29)	1.875-16 UN	(2.143) 54.43	(1.905) 48.39	(1.634) 41.50	(2.046) 51.97	.134-32	(.643) 16.33	(1.081) 27.46
J (33)	2.062-16 UNS	(2.329) 59.16	(1.968) 49.99	(1.859) 47.22	(2.209) 56.11	.162-32	(.704) 17.88	(1.187) 30.15

Note: All dimensions are in mm (inches)

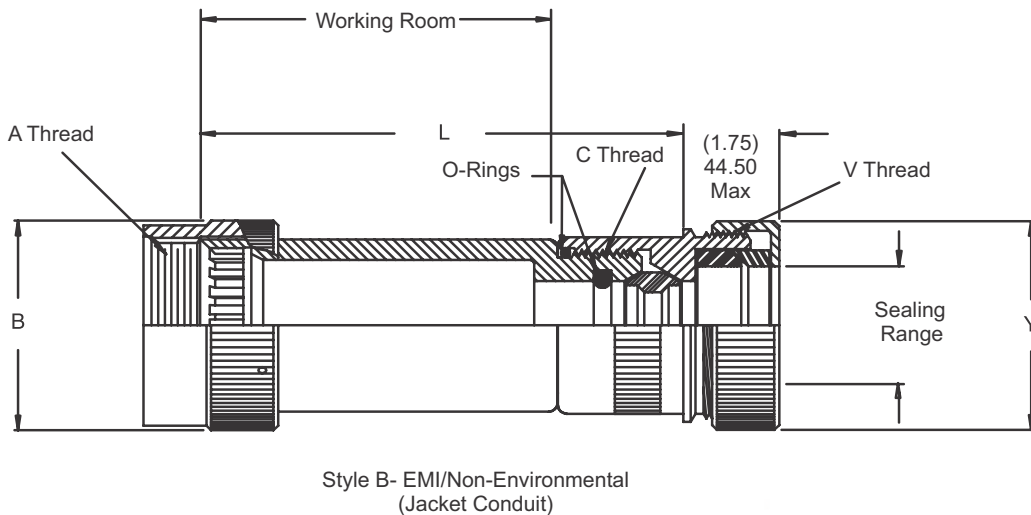
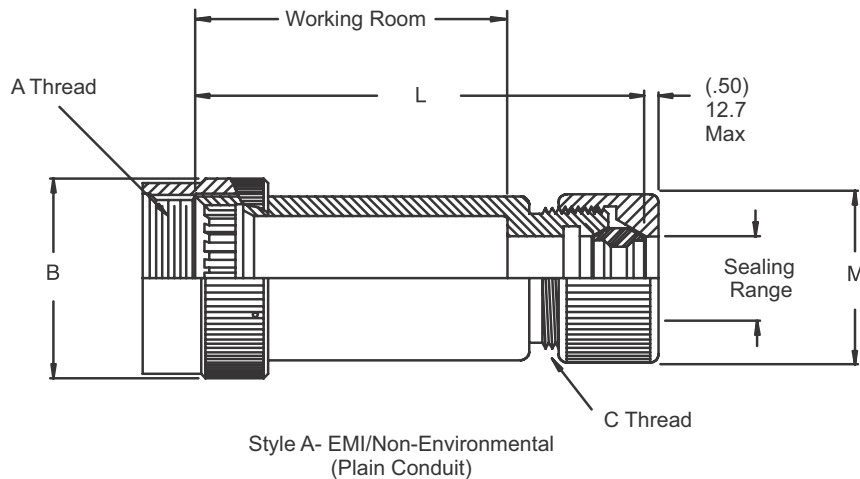
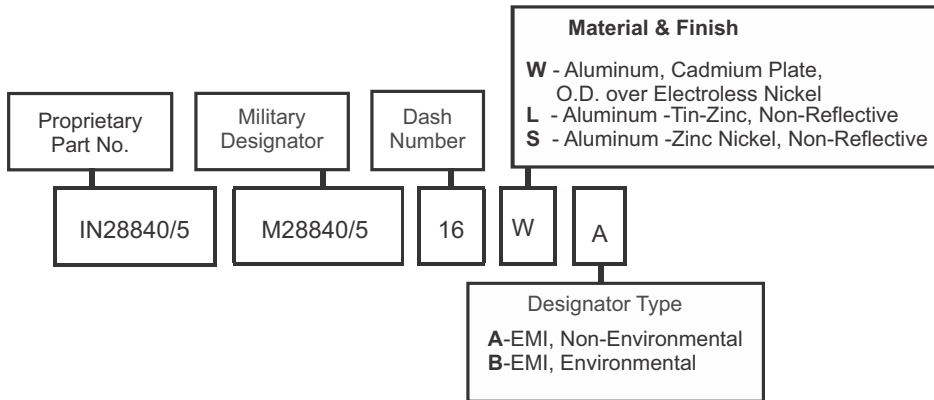


Material & Finish
W - Aluminum, Cadmium Plate, O.D. over Electroless Nickel
L - Aluminum -Tin-Zinc, Non-Reflective
S - Aluminum -Zinc Nickel, Non-Reflective



Designator	A Thread Class 2B	B Max. Diameter	C Max.	D Max.	E Max.	Screw Size Ref.	Cable Entry	
							Min.	Max.
A (11)	.750-20 UNEF	(1.028) 26.11	(1.091) 27.71	(.929) 23.60	(.903) 22.94	.114-40	(.177) 4.50	(.286) 7.26
B (13)	.875-20 UNEF	(1.141) 28.98	(1.091) 27.71	(.929) 23.60	(.977) 24.82	.114-40	(.177) 4.50	(.286) 7.26
C (15)	1.000-20 UNEF	(1.263) 32.08	(1.091) 27.71	(1.056) 26.82	(1.151) 29.24	.114-40	(.250) 6.35	(.416) 10.57
D (17)	1.125-18 UNEF	(1.387) 35.23	(1.206) 30.63	(1.233) 31.32	(1.281) 32.54	.114-40	(.291) 7.39	(.476) 12.09
E (19)	1.250-18 UNEF	(1.513) 38.43	(1.320) 33.53	(1.296) 32.92	(1.406) 35.71	.114-40	(.348) 8.84	(.626) 15.90
F (23)	1.438-18 UNEF	(1.703) 43.26	(1.445) 36.70	(1.358) 34.49	(1.576) 40.03	.134-32	(.429) 10.90	(.831) 21.11
G (25)	1.562-18 UNEF	(1.825) 46.36	(1.570) 39.88	(1.420) 36.07	(1.666) 42.32	.134-32	(.523) 13.28	(.956) 24.28
H (29)	1.875-16 UN	(2.143) 54.43	(1.721) 43.71	(1.634) 41.50	(2.046) 51.97	.134-32	(.643) 16.33	(1.081) 27.46
J (33)	2.062-16 UNS	(2.329) 59.16	(1.908) 48.46	(1.859) 47.22	(2.209) 56.11	.162-32	(.704) 17.88	(1.187) 30.15

Note: All dimensions are in mm (inches)



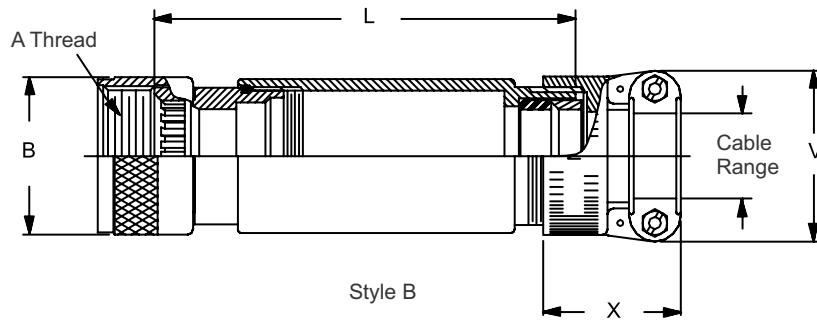
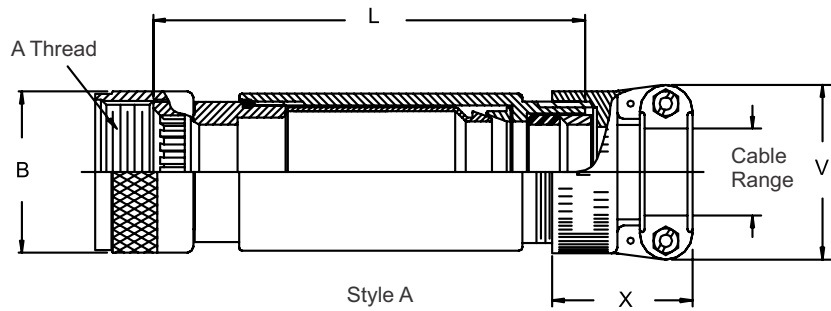
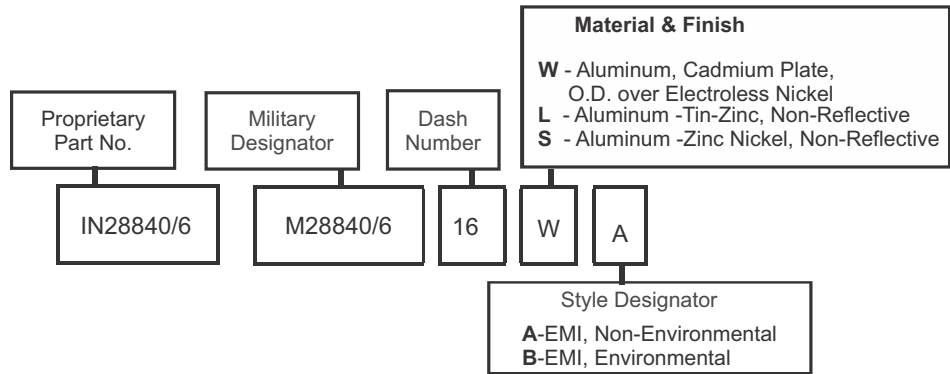
Note: All dimensions are in mm (inches)

Dash Number	Designator	Conduit Size	L ± .12 (± 3.05)	Working Room Ref.	V Thread Class 2*	M Max. Diameter	Y Max. Diameter
01	A (11)	03	(1.75) 44.45	(1.00) 25.4	1.00-20 UNEF	(1.12) 28.45	1.19 (30.23)
02	B (13)						
03		04			1.188-18 UNEF	(1.25) 31.8	(1.38) 35.1
04	C (15)	03			1.000-20 UNEF	(1.12) 28.5	(1.19) 30.23
05		04			1.188-30 UNEF	(1.25) 31.8	(1.38) 35.1
06		05			1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
07		06	(3.00) 76.2	1.750-18 UNS	(1.62) 41.2	(1.94) 49.3	
08	D (17)	05	(2.25) 57.15	(1.50) 38.10	1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
09		06			1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
10		08		(2.00) 50.80	2.00-18 UNS	(1.81) 46.0	(2.19) 55.6
11	E (19)	05		(1.50) 38.10	1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
12		06			1.750-18 UNEF	(1.62) 41.2	(1.94) 49.3
13		08			2.00-18 UNS	(1.81) 46.2	(2.19) 55.6
14	F (23)	06	(2.75) 69.85	(2.00) 50.80	1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
15		08			2.00-18 UN	(1.81) 46.0	(2.19) 55.6
16		10			(3.50) 88.90	2.00-16 UN	(2.18) 55.4
17	G (25)	06	(2.75) 60.85		1.750-18 UN	(1.62) 41.2	(1.94) 49.3
18		08			2.00-18 UN	(1.81) 46.0	(2.19) 55.6
19		10			2.250-16 UN	(2.18) 55.4	(2.44) 62.0
20	H (29)	12	(4.00) 101.6	(2.50) 63.50	2.500-16 UN	(2.56) 65.0	(2.69) 68.3
21		10	(3.25) 82.55		2.250-16 UN	(2.18) 55.4	(2.44) 62.0
22		12			2.500-16 UN	(2.56) 65.0	(2.66) 68.3
23		J (33)			12	2.500-16 UN	(2.56) 65.0
24	16			3.00-16 UN	(3.06) 77.8	(3.18) 81.0	
25	A (11)	04	(1.75) 44.45	(1.00) 25.4	1.188-18 UNEF	(1.75) 31.75	(1.38) 35.0

Note: All dimensions are in mm (inches)

Dash No.	Designator	A Thread Class 2B	B Dia. Max.	C Thread Class 2	Sealing Range	
					Max.	Min.
01	A (11)	.750-20 UNEF	(1.028) 26.11	.875-20 UNEF	(.63) 16.0	(0.50) 12.7
02	B (13)	.875-20 UNEF	(1.141) 28.98			
03				1.000-20 UNEF	(.75) 19.1	(.63) 16.0
04	C (15)	1.000-20 UNEF	(1.263) 32.08	.875-20 UNEF	(.63) 16.0	(.50) 12.7
05				1.000-20 UNEF	(.75) 19.1	(.63) 16.0
06				1.125-18 UNEF	(.88) 22.4	(.75) 19.1
07				1.250-18 UNEF	(1.00) 25.4	(.88) 22.4
08	D (17)	1.250-18 UNEF	(1.387) 35.23	1.125-18 UNEF	(.88) 22.4	(.75) 19.1
09				1.250-18 UNEF	(1.00) 25.4	(.88) 22.4
10				1.625-18 UNEF	(1.38) 35.1	(1.19) 30.2
11	E (19)	1.250-18 UNEF	(1.513) 38.43	1.125-18 UNEF	(.88) 22.4	(.75) 19.1
12				1.250-18 UNEF	(1.00) 25.4	(.88) 22.4
13				1.625-18 UNEF	(1.38) 35.1	(1.19) 30.2
14	F (23)	1.438-18 UNEF	(1.703) 45.51	1.250-18 UNEF	(1.00) 25.4	(.88) 22.4
15				1.625-18 UNEF	(1.38) 35.1	(1.19) 30.2
16				1.875-18 UNS	(1.63) 41.4	(1.44) 36.6
17	G (25)	1.562-18 UNEF	(1.825) 46.35	1.250-18 UNEF	(1.00) 25.4	(.88) 22.4
18				1.625-18 UNEF	(1.38) 35.1	(1.19) 30.2
19				1.875-18 UNS	(1.63) 41.4	(1.44) 36.6
20				2.125-16 UN	(1.88) 47.8	(1.63) 41.4
21	H (29)	1.875-16 UN	(2.143) 54.43	1.875-18 UNS	(1.63) 41.4	(1.44) 36.6
22				2.125-16 UN	(1.88) 47.8	(1.63) 41.4
23	J (33)	2.062-16 UNS	(2.329) 59.16	2.125-16 UN	(1.88) 47.8	(1.63) 41.4
24				2.750-16 UN	(2.38) 60.5	(2.13) 54.1
25	A (11)	.750-20 UNEF	(1.028) 26.11	.875-20 UN	(.75) 19.05	(.63) 16.00

Note: All dimensions are in mm (inches)



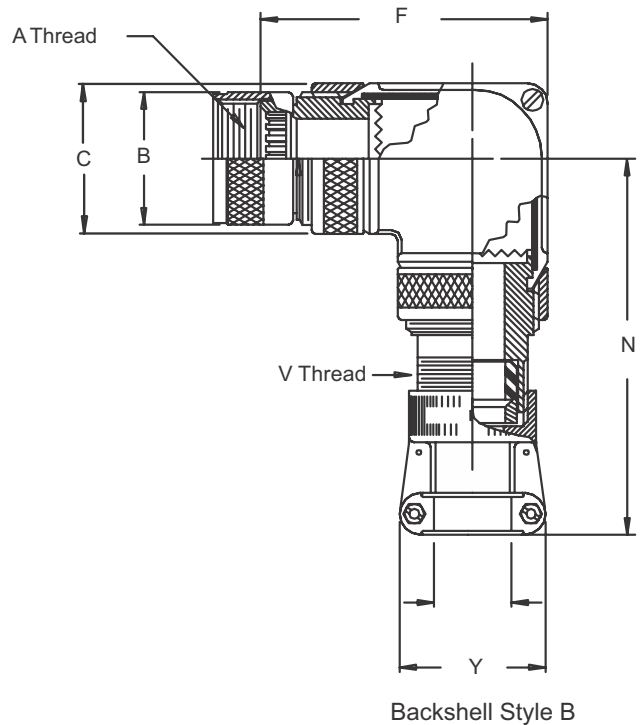
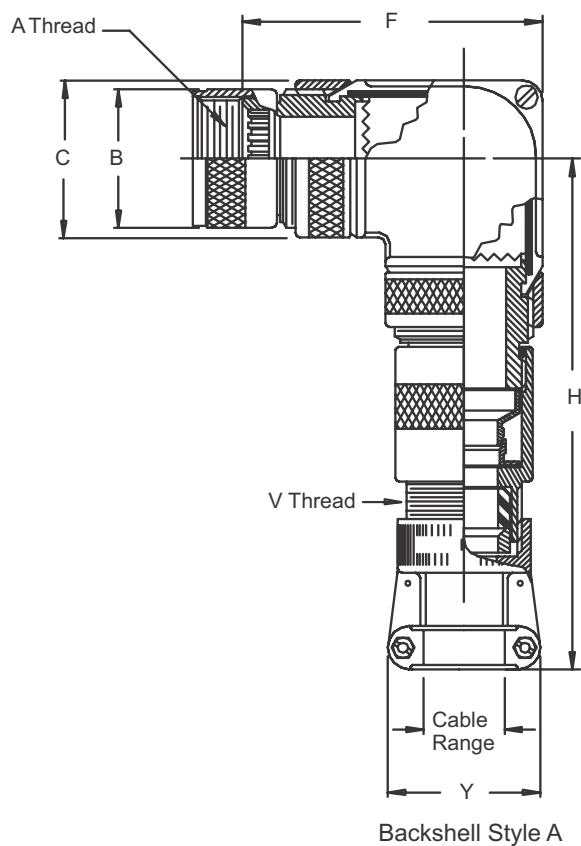
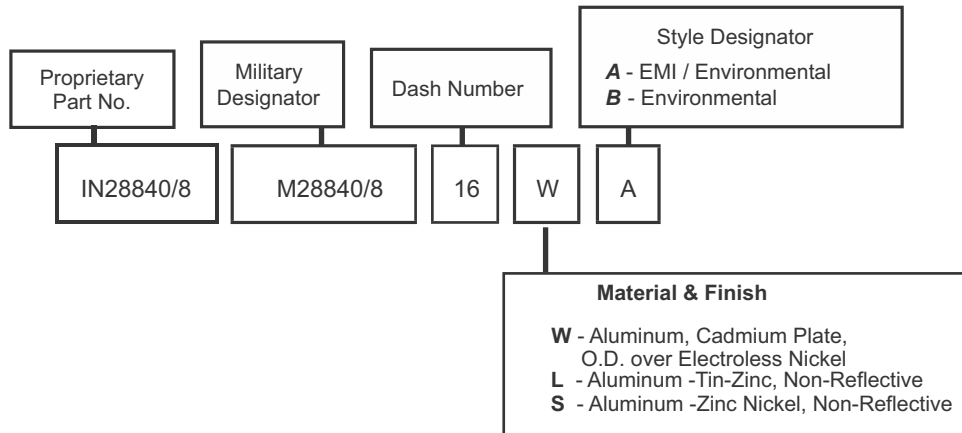
Note: All dimensions are in mm (inches)

Dash Number	Designator	A Thread Class 2B	B Diameter Max.	C Diameter Max.	D Diameter Min.	Cable Range	
						Max.	Min.
01	A (11)	.750-20 UNEF	(1.028) 26.11	(1.156) 29.36	(.750) 19.05	(.312) 7.92	(.188) 4.77
02	B (13)	.875-20 UNEF	(1.141) 28.98	(1.156) 29.36	(.750) 19.05	(.312) 7.92	(.188) 4.77
03	B (13)	.875-20 UNEF	(1.141) 28.98	(1.156) 29.36	(.750) 19.05	(.438) 11.12	(.281) 7.14
04	C (15)	1.000-20 UNEF	(1.263) 32.08	(1.281) 32.54	(.875) 22.23	(.312) 7.92	(.188) 4.77
05	C (15)	1.000-20 UNEF	(1.263) 32.08	(1.281) 32.54	(.875) 22.23	(.438) 11.12	(.281) 7.14
06	C (15)	1.000-20 UNEF	(1.263) 32.08	(1.281) 32.54	(.875) 22.23	(.562) 14.27	(.344) 8.74
07	C (15)	1.000-20 UNEF	(1.263) 32.08	(1.406) 35.71	(1.000) 25.40	(.750) 19.05	(.438) 11.12
08	D (17)	1.125-18 UNEF	(1.387) 35.23	(1.406) 35.71	(1.000) 25.40	(.625) 15.87	(.375) 9.52
09	D (17)	1.125-18 UNEF	(1.387) 35.23	(1.406) 35.71	(1.000) 25.40	(.750) 19.05	(.438) 11.12
10	D (17)	1.125-18 UNEF	(1.387) 35.23	(1.531) 38.89	(1.125) 28.58	(.938) 23.82	(.625) 15.87
11	E (19)	1.250-18 UNEF	(1.513) 38.43	(1.531) 38.89	(1.125) 28.58	(.625) 15.87	(.375) 9.52
12	E (19)	1.250-18 UNEF	(1.513) 38.43	(1.531) 38.89	(1.125) 28.58	(.938) 23.82	(.625) 15.87
13	F (23)	1.438-18 UNEF	(1.703) 45.51	(1.656) 42.06	(1.250) 31.75	(.750) 19.05	(.438) 11.12
14	F (23)	1.438-18 UNEF	(1.703) 45.51	(1.656) 42.06	(1.250) 31.75	(.938) 23.82	(.625) 15.87
15	F (23)	1.438-18 UNEF	(1.703) 45.51	(1.781) 45.24	(1.375) 34.93	(1.188) 30.17	(.812) 20.62
16	G (25)	1.562-18 UNEF	(1.825) 46.35	(1.781) 45.24	(1.375) 34.93	(.938) 23.82	(.625) 15.87
17	G (25)	1.562-18 UNEF	(1.825) 46.35	(1.781) 45.24	(1.375) 34.93	(1.188) 30.17	(.812) 20.62
18	G (25)	1.562-18 UNEF	(1.825) 46.35	(1.781) 45.24	(1.375) 34.93	(1.250) 31.75	(.875) 22.23
19	G (25)	1.562-18 UNEF	(1.825) 46.35	(2.156) 54.76	(1.750) 44.45	(1.380) 35.05	(1.000) 25.4
20	H (29)	1.875-16 UNS	(2.143) 54.43	(2.156) 54.76	(1.750) 44.45	(1.188) 30.17	(.812) 20.62
21	H (29)	1.875-16 UNS	(2.143) 54.43	(2.156) 54.76	(1.750) 44.45	(1.380) 38.05	(1.000) 25.4
22	J (33)	2.062-16 UNS	(2.329) 59.16	(2.281) 57.94	(1.875) 47.63	(1.380) 38.05	(1.000) 25.4
23	J (33)	2.062-16 UNS	2.329) 59.16	(2.281) 57.94	(1.875) 47.63	(1.625) 41.28	(1.250) 31.75
24	A (11)	.750-20 UNEF	(1.028) 26.11	(1.156) 29.36	(.750) 19.05	(.438) 11.12	(.281) 7.14
25	A (11)	.750-20 UNEF	(1.028) 26.11	(1.281) 32.54	(.875) 22.22	(.562) 14.27	(.344) 8.74
26	B (13)	.875-30 UNEF	(1.141) 28.98	(1.281) 32.54	(.875) 22.22	(.562) 14.27	(.344) 8.74
27	B (13)	.875-30 UNEF	(1.141) 28.98	(1.406) 35.71	(1.000) 25.4	(.625) 15.87	(.375) 9.52
28	C (15)	1.000-20 UNEF	(1.263) 32.08	(1.406) 35.71	(1.000) 25.4	(.625) 15.87	(.375) 9.52

Note: All dimensions are in mm (inches)

Dash Number	Designator	L ± .12 (± 3.05)	Working Room Ref.	V Thread Class 2*	X Max. Diameter	Y Ref
01	A (11)	(3.62) 91.55	(2.00) 50.80	.625-24 UNEF	(1.281) 32.53	(.938) 23.82
02	B (13)	(3.62) 91.55	(2.00) 50.80	.625-24 UNEF	(1.281) 32.53	(.938) 23.82
03	B (13)	(3.62) 91.55	(2.00) 50.80	.750-20 UNEF	(1.281) 32.53	(1.125) 23.82
04	C (15)	(3.62) 91.55	(2.00) 50.80	.625-24 UNEF	(1.281) 32.53	(.938) 23.82
05	C (15)	(3.62) 91.55	(2.00) 50.80	.750-20 UNEF	(1.281) 32.53	(1.125) 28.57
06	C (15)	(3.62) 91.55	(2.00) 50.80	.875-20 UNEF	(1.281) 32.53	(1.312) 33.32
07	C (15)	(4.12) 104.65	(2.50) 63.50	1.188-18 UNEF	(1.312) 33.32	(1.593) 40.62
08	D (17)	(4.12) 104.65	(2.50) 63.50	1.000-20 UNEF	(1.281) 32.54	(1.312) 33.32
09	D (17)	(4.12) 104.65	(2.50) 63.50	1.188-19 UNEF	(1.312) 33.32	(1.593) 40.62
10	D (17)	(4.12) 104.65	(2.50) 63.50	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
11	E (19)	(4.12) 104.65	(2.50) 63.50	1.000-20 UNEF	(1.281) 32.54	(1.312) 33.32
12	E (19)	(4.12) 104.65	(2.50) 63.50	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
13	F (23)	(4.62) 117.35	(3.00) 76.20	1.188-18 UNEF	(1.312) 33.32	(1.593) 40.62
14	F (23)	(4.62) 117.35	(3.00) 76.20	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
15	F (23)	(4.62) 117.35	(3.00) 76.20	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
16	G (25)	(4.62) 117.35	(3.00) 76.20	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
17	G (25)	(5.12) 130.05	(3.50) 88.90	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
18	G (25)	(5.12) 130.05	(3.50) 88.90	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
19	G (25)	(5.12) 130.05	(3.50) 88.90	2.000-18 UNS	(1.625) 41.28	(2.343) 59.51
20	H (29)	(5.12) 130.05	(3.50) 88.90	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
21	H (29)	(5.12) 130.05	(3.50) 88.90	2.000-18 UNS	(1.625) 41.28	(2.343) 59.51
22	J (33)	(5.12) 130.05	(3.50) 88.90	2.000-18 UNS	(1.625) 41.28	(2.343) 59.51
23	J (33)	(5.12) 130.05	(3.50) 88.90	2.250-16 UNS	(1.900) 48.26	(2.750) 69.85
24	A (11)	(3.62) 91.95	(2.00) 50.80	.750-20 UNEF	(1.281) 32.54	(1.125) 28.57
25	A (11)	(3.62) 91.95	(2.00) 50.80	.875-20 UNEF	(1.281) 32.54	(1.312) 33.32
26	B (13)	(3.62) 91.95	(2.00) 50.80	.875-20 UNEF	(1.281) 32.54	(1.312) 33.32
27	B (13)	(4.12) 104.65	(2.50) 63.50	1.000-20 UNEF	(1.281) 32.54	(1.312) 33.32
28	C (15)	(4.12) 104.65	(2.50) 63.50	1.000-20 UNEF	(1.281) 32.54	(1.312) 33.32

Note: All dimensions are in mm (inches)



Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	A Thread Class 2B	B Max. Diameter	C Max. Diameter	D Max. Diameter
A	01	A (11)	.750-20 UNEF	(1.028) 26.11	(1.188) 30.17	(1.031) 26.19
A	02	B (13)	.875-20 UNEF	(1.141) 28.98		
B	03	B (13)				
A	04	C (15)	1.00-20 UNEF	(1.263) 32.08	(1.438) 36.52	(1.156) 29.36
B	05	C (15)				
C	06	C (15)				
D	07	C (15)				
A	08	D (17)	1.125-18 UNEF	(1.387) 35.23	(1.688) 42.87	(1.281) 32.54
B	09	D (17)				
C	10	D (17)				
A	11	E (19)	1.250-18 UNEF	(1.513) 38.43	(1.938) 49.22	(1.406) 35.71
B	12	E (19)				
A	13	F (23)	1.438-18 UNEF	(1.703) 43.51		
B	14	F (23)				
C	15	F (23)				
A	16	G (25)	1.562-18 UNEF	(1.825) 46.35	(2.188) 54.43	(1.531) 38.89
B	17	G (25)				
C	18	G (25)				
D	19	G (25)				
A	20	H (29)	1.875-16 UN	(2.143) 54.43		
B	21	H (29)				

Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	X Ref. Dimension	Y Ref. Dimension	H Max. Style A	N Max. Style B
A	01	A (11)	(1.281) 32.54	(.938) 23.82	(5.332) 134.43	(2.962) 75.23
A	02	B (13)		(.938) 23.82	(5.332) 134.43	(2.962) 75.23
B	03	B (13)		(1.125) 28.57	(5.332) 34.43	(2.962) 75.23
A	04	C (15)		(.938) 23.82	(5.457) 138.61	(3.087) 78.41
B	05	C (15)		(1.125) 28.57	(5.457) 138.61	(3.087) 78.41
C	06	C (15)		(1.312) 33.32	(5.457) 138.61	(3.087) 78.41
D	07	C (15)		(1.593) 40.62	(5.682) 144.32	(3.312) 84.12
A	08	D (17)		(1.312) 33.32	(5.682) 144.32	(3.312) 84.12
B	09	D (17)	(1.312) 33.32	(1.593) 40.62	(5.713) 145.11	(3.343) 84.91
C	10	D (17)	(1.406) 35.71	(1.750) 44.45	(5.807) 147.50	(3.437) 87.30
A	11	E (19)	(1.281) 32.54	(1.312) 33.32	(5.682) 144.32	(3.312) 84.12
B	12	E (19)	(1.406) 35.71	(1.750) 44.45	(5.832) 148.13	(3.462) 87.93
A	13	F (23)	(1.312) 33.32	(1.593) 40.62	(5.738) 145.28	(3.368) 85.55
B	14	F (23)	(1.406) 35.71	(1.750) 44.45	(5.832) 148.13	(3.462) 87.93
C	15	F (23)	(1.593) 40.46	(2.093) 53.16	(6.019) 152.88	(3.649) 92.68
A	16	G (25)	(1.406) 35.71	(1.750) 44.45	(5.832) 148.13	(3.462) 87.93
B	17	G (25)	(1.593) 40.46	(2.093) 53.16	(6.019) 152.88	(3.649) 92.68
C	18	G (25)	(1.593) 40.46	(2.093) 53.16	(6.144) 156.06	(3.774) 95.86
D	19	G (25)	(1.625) 41.28	(2.343) 59.51	(6.176) 156.87	(3.806) 96.62
A	20	H (29)	(1.593) 40.46	(2.093) 53.16	(6.144) 156.06	(3.774) 95.86
B	21	H (29)	(1.625) 41.28	(2.343) 59.51	(6.176) 156.87	(3.806) 96.62

Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	Cable Range		E Max. Dim.	F Max. DIM.	V Thread 2	
			Max.	Min.				
A	01	A (11)	(.312) 7.92	(.188) 4.77	(1.156) 29.36	(2.614)	.625-24 UNEF	
A	02	B (13)	(.312) 7.92	(.188) 4.77		66.40	.625-24 UNEF	
B	03	B (13)	(.438) 11.12	(.281) 7.14		.750-20 UNEF		
A	04	C (15)	(.312) 7.92	(.188) 4.77	(1.281) 32.54	(2.864) 72.75	.625-24 UNEF	
B	05	C (15)	(.438) 11.12	(.281) 7.14			.750-20 UNEF	
C	06	C (15)	(.562) 14.27	(.344) 8.74			.875-20 UNEF	
D	07	C (15)	(.750) 19.05	(.438) 11.12	(1.406) 35.71	(3.114) 79.10	1.188-18 UNEF	
A	08	D (17)	(.625) 15.87	(.375) 9.82			1.000-20 UNEF	
B	09	D (17)	(.750) 19.05	(.438) 11.12			1.188-18 UNEF	
C	10	D (17)	(.938) 23.82	(.625) 15.87			(1.531) 38.89	1.438-18 UNEF
A	11	E (19)	(.625) 15.87	(.375) 9.52			(1.406) 35.71	1.00-20 UNEF
B	12	E (19)	(.938) 23.82	(.625) 15.87	(1.531) 38.89	(3.364) 85.45	1.438-18 UNEF	
A	13	F (23)	(.750) 19.05	(.438) 11.12	(1.406) 25.71		1.188-18 UNEF	
B	14	F (23)	(.938) 23.82	(.625) 15.87	(1.531) 38.89		1.438-18 UNEF	
C	15	F (23)	(1.188) 30.17	(.812) 20.62	(1.781) 45.24		1.750-18 UNEF	
A	16	G (25)	(.938) 23.82	(.625) 15.87	(1.531) 38.89		1.438-18 UNEF	
B	17	G (25)	(1.188) 30.17	(.812) 20.62	(1.781) 45.24		1.750-18 UNS	
C	18	G (25)	(1.250) 31.75	(.875) 22.23				
D	19	G (25)	(1.380) 35.05	(1.000) 25.40	(2.156) 54.76	(3.614) 91.80	2.000-16 UNS	
A	20	H (29)	(1.188) 30.17	(.812) 20.62	(1.781) 45.24		1.750-18 UNS	
B	21	H (29)	(1.380) 35.05	(1.000) 25.40	(2.156) 54.76		2.000-18 UNS	

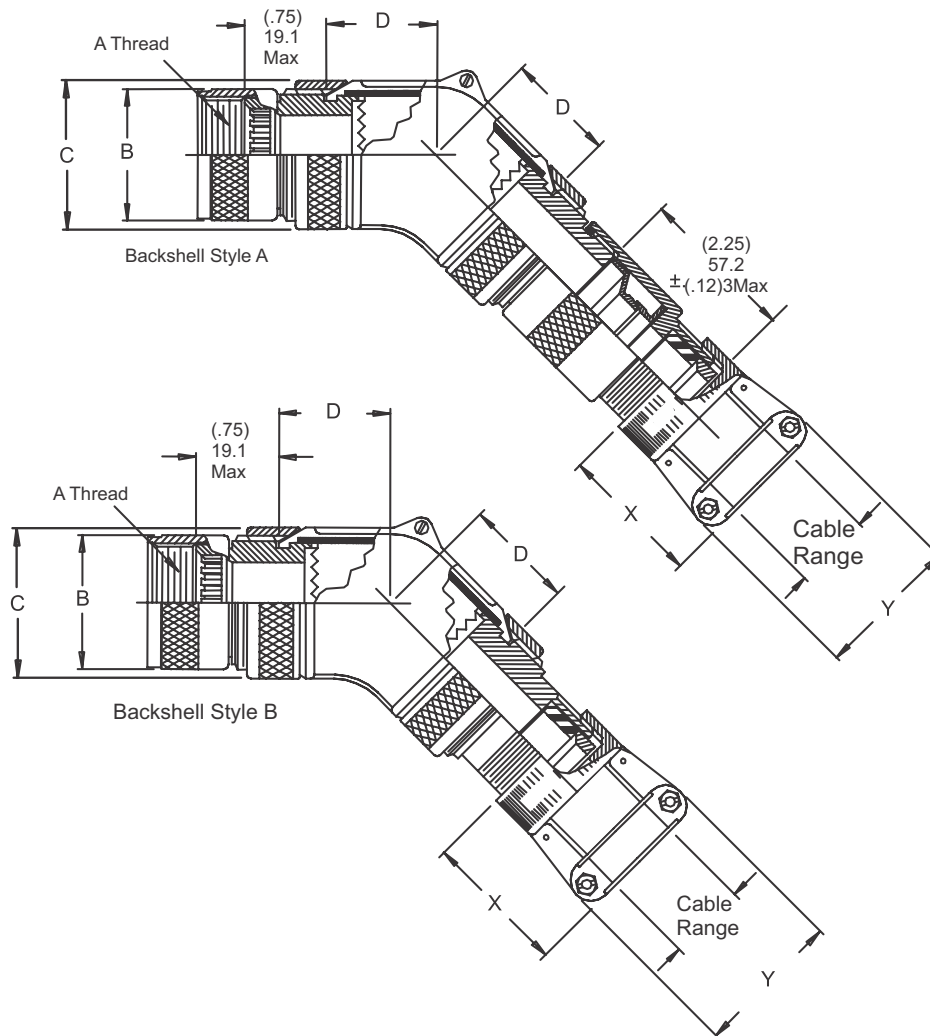
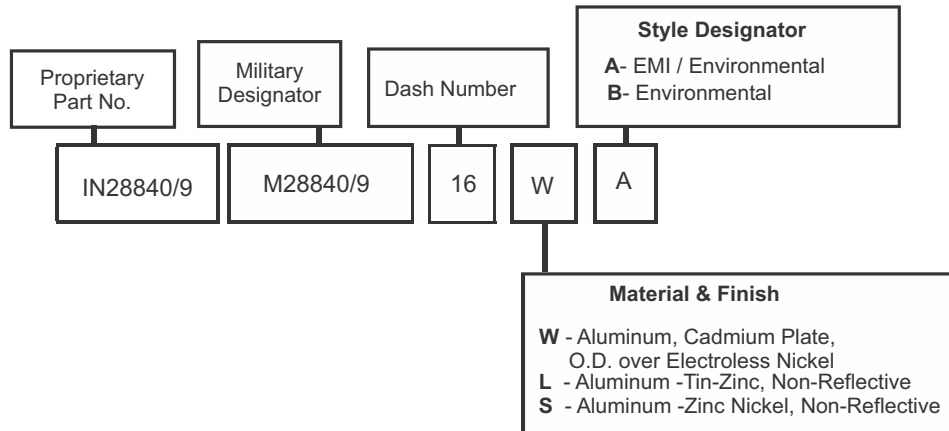
Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	A Thread Class 2B	B Max. Diameter	C Max. Diameter	D Max. Diameter
A	22	J (33)	2.062-16 UNS	(2.329) 59.16	(2.688) 68.26	(1.781) 45.24
A	23	J (33)				
B	24	A (11)	.750-20 UNEF	(1.028) 26.11	(1.188) 30.17	(1.031) 26.19
C	25	A (11)			(1.438) 36.52	(1.156) 29.36
C	26	B (13)	.875-20 UNEF	(1.141) 28.98	(1.688) 42.87	(1.281) 32.54
D	27	B (13)				
E	28	C (15)	1.000-20 UNEF	(1.263) 32.08		

Backshell Size	Dash Number	Designator	Cable Range		E Max. Dimensions	F Max. Dimensions	V Thread Class 2
			Max.	Min.			
A	22	J (33)	(1.380) 35.05	(1.000) 25.40	(2.281) 57.94	(4.114) 104.50	2.000-18 UNS
A	23	J (33)	(1.625) 41.26	(1.250) 31.75			2.250-16 UNS
B	24	A (11)	(.438) 11.12	(.281) 7.14	(1.156) 29.36	(2.614) 66.40	.750-20 UNEF
C	25	A (11)	(.562) 14.27	(.344) 8.74	(1.281) 32.54	(2.864) 72.75	.875-20 UNEF
C	26	B (13)	(.562) 14.27	(.344) 8.74			
D	27	B (13)	(.625) 15.87	(.375) 9.52	(1.406) 35.71	(3.114) 79.10	1.000-20 UNEF
E	28	C (15)	(.625) 15.87	(.375) 9.50			

Backshell Size	Dash Number	Designator	X Ref. Dimensions	Y Ref. Dimensions	H Max. Style A	N Max. Style B
A	22	J (33)	(1.625) 41.28	(2.343) 59.51	(6.426) 163.22	(4.056) 103.02
A	23	J (33)	(1.900) 48.26	(2.750) 59.85	(6.701) 170.21	(4.33) 110.01
B	24	A (11)	(1.281) 32.54	(1.125) 28.57	(5.332) 135.43	(2.962) 75.23
C	25	A (11)		(5.457) 138.61	(3.087) 78.41	
C	26	B (13)		(5.457) 138.61	(3.087) 78.41	
C	27	B (13)		(5.682) 144.32	(3.312) 84.12	
B	28	C (15)		(1.312) 33.32	(5.682) 144.32	(3.312) 84.12

Note: All dimensions are in mm (inches)



Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	A Thread	B Max. Diameter	C Max. Diameter	D Max.
A	01	A (11)	.750-20 UNEF	(1.028) 26.11	(1.188) 30.18	(1.031) 26.19
A	02	B (13)	.875-20 UNEF	(1.141) 28.98		
B	03	B (13)				
A	04	C (15)	1.00-20 UNEF	(1.263) 32.08	(1.438) 36.53	(1.156) 29.36
B	05	C (15)				
C	06	C (15)				
D	07	C (15)				
A	08	D (17)	1.125-18 UNEF	(1.387) 35.23	(1.688) 42.88	(1.281) 32.54
B	09	D (17)				
C	10	D (17)				
A	11	E (19)	1.250-18 UNEF	(1.513) 38.43	(1.938) 49.23	(1.406) 35.71
B	12	E (19)				
A	13	F (23)	1.438-18 UNEF	(1.703) 43.51		
B	14	F (23)				
C	15	F (23)				
A	16	G (25)	1.562-18 UNEF	(1.825) 46.35	(2.188) 55.58	(1.531) 38.89
B	17	G (25)				
C	18	G (25)				
D	19	G (25)				
A	20	H (29)	1.875-16 UN	(2.143) 54.43		
B	21	H (29)				

Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	Cable Range		E Max. Dim.	F Max. Style A	H Max. Style B
			Max.	Min.			
A	01	A (11)	(.312) 7.92	(.188) 4.77	(1.156) 29.36	(5.879) 149.33	(4.199) 106.65
A	02	B (13)	(.312) 7.92	(.188) 4.77		(5.879) 149.33	(4.199) 106.65
B	03	B (13)	(.438) 11.12	(.281) 7.14		(5.932) 150.67	(4.252) 108.00
A	04	C (15)	(.312) 7.92	(.188) 4.77	(1.281) 32.54	(6.092) 154.74	(4.412) 112.06
B	05	C (15)	(.438) 11.12	(.281) 7.14		(6.146) 156.11	(4.466) 113.44
C	06	C (15)	(.562) 14.27	(.344) 8.74		(6.202) 157.53	(4.522) 114.86
D	07	C (15)	(.750) 19.05	(.438) 11.12	(1.406) 35.71	(6.533) 165.94	(4.853) 123.27
A	08	D (17)	(.625) 15.87	(.375) 9.82		(6.413) 1626.89	(4.733) 120.22
B	09	D (17)	(.750) 19.05	(.438) 11.12		(6.533) 165.94	(4.853) 123.27
C	10	D (17)	(.938) 23.82	(.625) 15.87	(1.531) 38.89	(6.636) 168.55	(4.956) 125.88
A	11	E (19)	(.625) 15.87	(.375) 9.52	(1.406) 35.71	(6.413) 162.89	(4.733) 120.22
B	12	E (19)	(.938) 23.82	(.625) 15.87	(1.531) 38.89	(6.846) 173.89	(5.166) 131.22
A	13	F (23)	(.750) 19.05	(.438) 11.12	(1.406) 25.71	(6.747) 171.37	(5.067) 128.70
B	14	F (23)	(.938) 23.82	(.625) 15.87	(1.531) 38.89	(6.846) 173.89	(5.166) 131.22
C	15	F (23)	(1.188) 30.17	(.812) 20.62	(1.781) 45.24	(7.103) 180.42	(5.423) 138.23
A	16	G (25)	(.938) 23.82	(.625) 15.87	(1.531) 38.89	(6.846) 173.89	(5.156) 130.96
B	17	G (25)	(1.188) 30.17	(.812) 20.62	(1.781) 45.24	(7.103) 180.42	(5.423) 138.23
C	18	G (25)	(1.250) 31.75	(.875) 22.23		(7.316) 185.83	(5.636) 143.15
D	19	G (25)	(1.380) 35.05	(1.000) 25.40	(2.156) 54.76	(7.425) 188.60	(5.745) 145.92
A	20	H (29)	(1.188) 30.17	(.812) 20.62	(1.781) 45.24	(7.316) 185.83	(5.636) 143.15
B	21	H (29)	(1.380) 35.05	(1.000) 25.40	(2.156) 54.76	(7.425) 188.60	(5.745) 145.92

Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	V Thread Class	X Ref. Dimension	Y Ref. Dimension
A	01	A (11)	.625-24 UNEF	(1.281) 32.5	(.938) 23.82
A	02	B (13)	.625-24 UNEF		(.938) 23.82
B	03	B (13)	.750-20 UNEF		(1.125) 28.57
A	04	C (15)	.625-24 UNEF		(.938) 23.82
B	05	C (15)	.750-20 UNEF		(1.125) 28.57
C	06	C (15)	.875-20 UNEF		(1.312) 33.32
D	07	C (15)	1.188-18 UNEF	(1.312) 33.32	(1.593) 40.62
A	08	D (17)	1.000-20 UNEF	(1.281) 32.54	(1.312) 33.32
B	09	D (17)	1.188-18 UNEF	(1.312) 33.32	(1.593) 40.62
C	10	D (17)	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
A	11	E (19)	1.000-20 UNEF	(1.281) 32.54	(1.312) 33.32
B	12	E (19)	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
A	13	F (23)	1.188-18 UNEF	(1.312) 33.32	(1.593) 40.62
B	14	F (23)	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
C	15	F (23)	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
A	16	G (25)	1.438-18 UNEF	(1.406) 35.71	(1.750) 44.45
B	17	G (25)	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
C	18	G (25)	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
D	19	G (25)	2.000-16 UNS	(1.625) 41.28	(2.343) 59.51
A	20	H (29)	1.750-18 UNS	(1.593) 40.46	(2.093) 53.16
B	21	H (29)	2.000-18 UNS	(1.625) 41.28	(2.343) 59.51

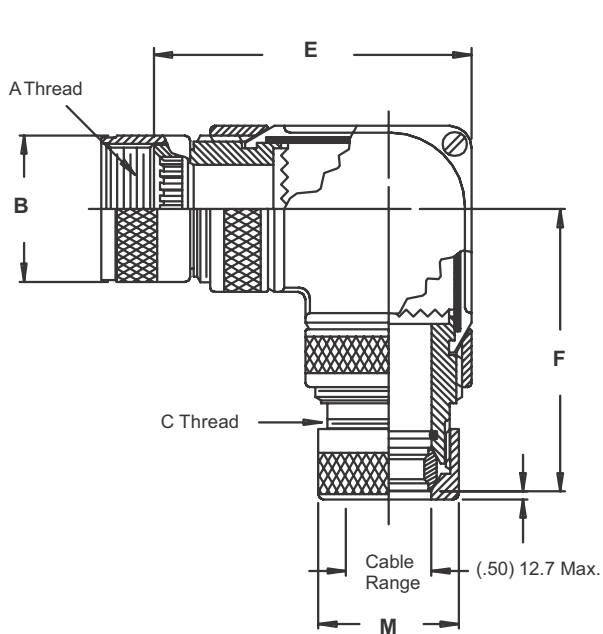
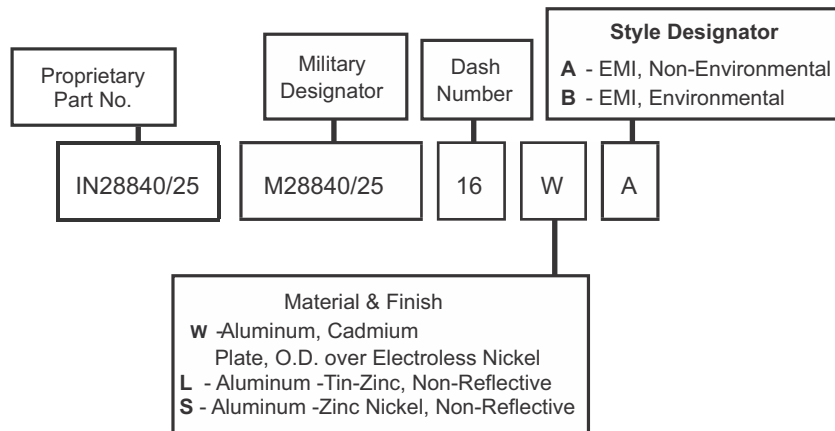
Note: All dimensions are in mm (inches)

Backshell Size	Dash Number	Designator	A Thread	B Max. Diameter	C Max. Diameter	D Max.
A	22	J (33)	2.062-16 UNEF	(2.329) 59.16	(2.688) 68.28	(1.781) 45.24
B	23	J (33)				
B	24	A (11)	.750-20 UNEF	(1.028) 26.11	(1.188) 30.18	(1.031) 26.19
C	25	A (11)				
C	26	B (13)	.875-20 UNEF	(1.141) 28.98	(1.438) 36.53	(1.156) 29.36
D	27	B (13)				
E	28	C (15)	1.000-20 UNEF	(1.263) 32.08	(1.688) 42.88	(1.281) 32.54

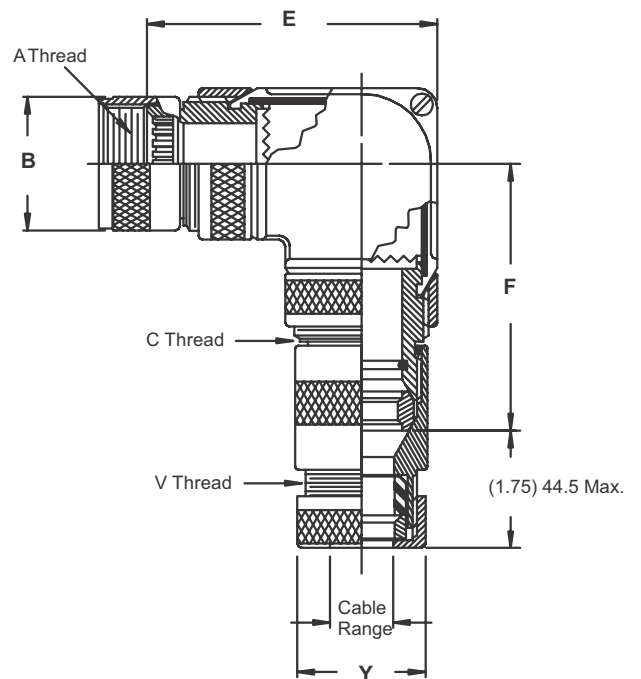
Backshell Size	Dash Number	Designator	Cable Range		E Max. Dimension	F Max. Style A	H Max. Style B
			Max.	Min.			
A	22	J (33)	(1.380) 35.05	(1.000) 25.40	(2.281) 57.94	(7.852) 199.44	(6.127) 156.77
B	23	J (33)	(1.625) 41.28	(1.250) 31.75		(6.454) 163.93	(6.454) 163.93
B	24	A (11)	(.438) 11.12	(.281) 7.14	(1.156) 29.36	(5.932) 150.67	(4.252) 108.00
C	25	A (11)	(.562) 14.27	(.344) 8.74	(1.281) 32.54	(6.202) 157.53	(4.522) 114.86
C	26	B (13)	(.562) 14.27	(.344) 8.74	(1.281) 32.54	(6.202) 157.53	(4.522) 114.86
D	27	B (13)	(.625) 15.87	(.375) 9.52	(1.406) 35.71	(6.413) 162.89	(4.733) 120.22
E	28	C (15)	(.625) 15.87	(.375) 9.50		(6.413) 162.89	(4.733) 120.22

Backshell Size	Dash Number	Designator	V Thread Class	X Ref. Dimension	Y Ref. Dimension
A	22	J (33)	2.000-18 UNS	(1.625) 41.28	(2.343) 59.51
B	23	J (33)	2.250-16 UNS	(1.900) 48.26	(2.750) 69.85
B	24	A (11)	.750-20 UNEF	(1.281) 32.54	(1.125) 28.57
C	25	A (11)	.875-20 UNEF		
C	26	B (13)	.875-20 UNEF		
D	27	B (13)	1.000-20 UNEF		
E	28	C (15)	1.000-20 UNEF		

Note: All dimensions are in mm (inches)



Style A- EMI/Non-Environmental
(Plain Conduit)



Style B- EMI/Non-Environmental
(Jacket Conduit)

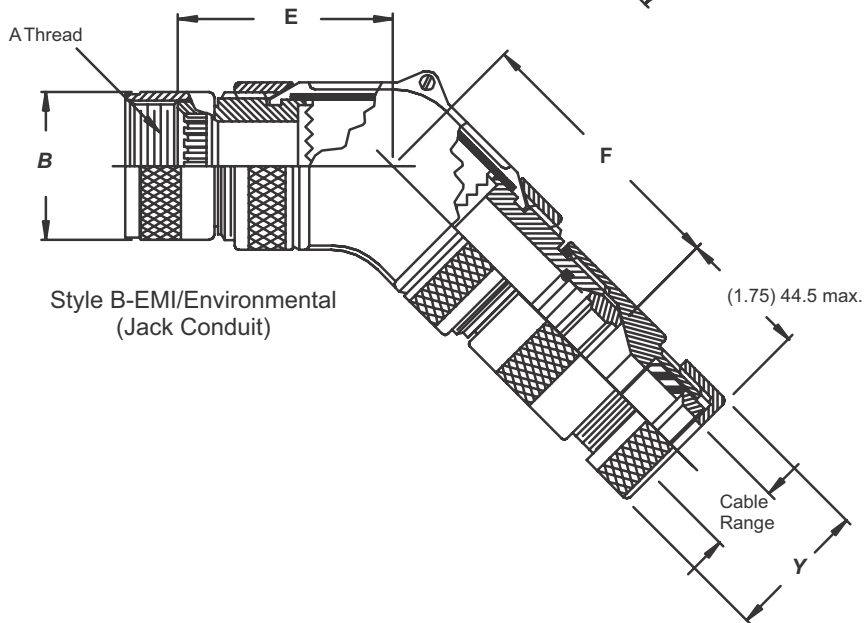
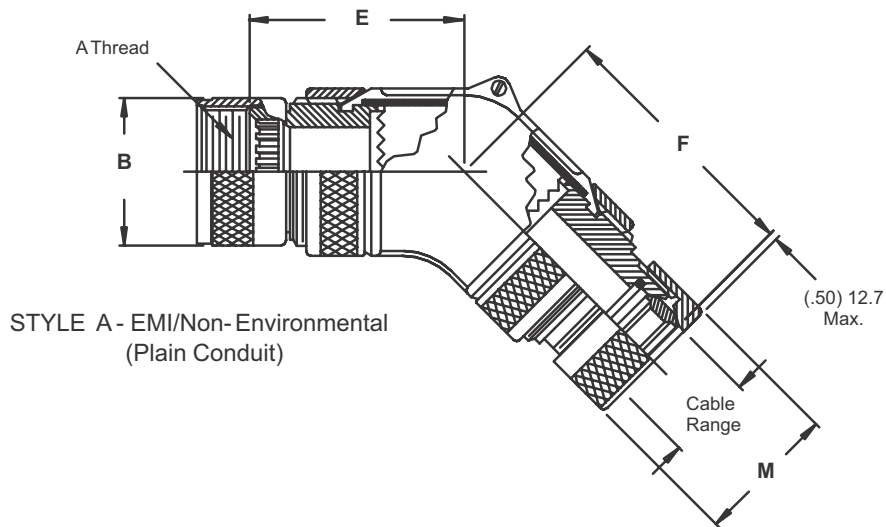
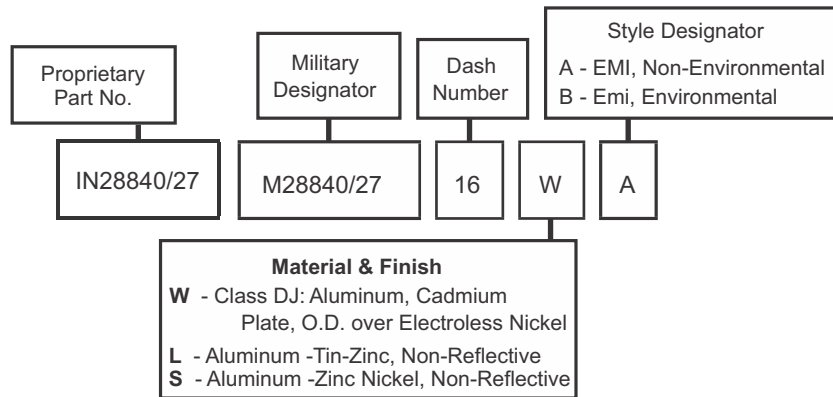
Note: All dimensions are in mm (inches)

Dash Number	Designator	A Thread Class 2B	B Diameter Max.	C Thread Class 1	D Max Diameter	Sealing Range	
						Max.	Min.
01	A (11)	.750-20 UNEF	(1.028) 26.11	.875-20 UNEF	(1.031) 26.19	(.63) 16.0	(.50) 12.7
02	B (13)	.875-20 UNEF	(1.141) 28.98	.875-20 UNEF		(.63) 6.0	(.50) 12.7
03				1.000-20 UNEF		(.75) 19.1	(.63) 16.0
04	C (15)	1.000-20 UNEF	(1.263) 32.08	.875-20 UNEF	(1.281) 32.58	(.63) 16.0	(.50) 12.7
05				1.000-20 UNEF		(.75) 19.1	(.63) 16.0
06				1.125-18 UNEF		(.88) 22.4	(.75) 19.1
07				1.250-18 UNEF		(1.00) 25.4	(.88) 22.4
08	D (17)	1.125-18 UNEF	(1.387) 35.23	1.125-18 UNEF	(1.531) 38.89	(.88) 22.4	(.75) 19.1
09				1.250-18 UNEF		(1.00) 25.4	(.88) 22.4
10				1.625-18 UNEF		(1.38) 35.1	(1.19) 30.2
11	E (19)	1.250-18 UNEF	(1.513) 38.43	1.125-18 UNEF	(1.781) 45.24	(.88) 22.4	(.75) 19.1
12				1.250-18 UNEF		(1.00) 25.4	(.88) 22.4
13				1.625-18 UNEF		(1.38) 35.1	(1.19) 30.2
14				1.250-18 UNEF		(1.00) 25.4	(.88) 8 22.4
15	F (23)	1.438-18 UNEF	(1.703) 45.51	1.625-18 UNEF	(1.781) 45.24	(1.38) 35.1	(1.18) 30.2
16				1.875-18 UNS		(1.63) 41.4	(1.44) 36.6
17				1.250-18 UNEF		(1.00) 25.4	(.88) 22.4
18	G (25)	1.562-18 UNEF	(1.825) 46.35	1.625-18 UNEF	(2.031) 51.59	(1.38) 35.1	(1.19) 30.2
19				1.875-18 UNS		(1.63) 41.4	(1.44) 36.5
20				2.125-16 UN		(1.88) 47.8	(1.63) 41.4
21	H (29)	1.875-16 UN	(2.143) 54.43	1.875-18 UNS	(2.031) 51.59	(1.63) 41.4	(1.44) 36.6
22				2.125-16 UN		(1.33) 47.8	(1.63) 41.4
23	J (33)	2.062-16 UNS	(2.329) 59.16	2.125-16 UN	(2.531) 64.29	(1.88) 47.8	(1.63) 41.4
24				2.750-16 UN		(2.38) 60.5	(2.13) 54.1
25	A (11)	.750-20 UNEF	(1.028) 26.11	.875-20 UNEF	(1.031) 25.19	(.75) 19.5	(.63) 16.0

Note: All dimensions are in mm (inches)

Dash Number	Designator	Conduit Size M28840/4	E Max. Dim.	F Max. Dim.	V Thread Class 2	M Max. Dia.	Y Max. Dia.
01	A (11)	03	(2.36) 59.9	(3.50) 92.8	1.000-20 UNEF	(1.12) 28.5	(1.19) 30.23
02	B (13)	03			1.000-20 UNEF	(1.12) 28.5	(1.19) 30.23
03		04			1.188-18 UNEF	(1.25) 31.8	(1.38) 35.1
04	C (15)	03	(2.56) 65.0	(3.69) 9.79	1.000-20 UNEF	(1.12) 28.5	(1.39) 35.3
05		04			1.118-18 UNEF	(1.25) 31.8	(1.38) 35.1
06		05			1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
07		06			(2.67) 67.8	(3.81) 101.0	1.750-18 UNS
08	05	1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4			
09	D (17)	06	1.750-18 UNS	(1.62) 42.2			(1.94) 49.3
10		08	2.00-18 UNS	(1.81) 46.0			(2.19) 55.6
11	E (19)	05	(3.05) 77.5	(4.19) 111.1	1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
12		06			1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
13		08			2.00-18 UNS	(1.81) 46.0	(2.19) 55.6
14	F (23)	06	(3.05) 77.5	(4.19) 111.1	1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
15		08			2.00-18 UNS	(1.81) 46.0	(2.19) 55.6
16		10			2.250-18 UN	(2.18) 55.4	(2.44) 62.0
17	G (25)	06	(3.05) 77.5	(4.19) 111.1	1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
18		08			2.00-18 UN	(1.81) 46.0	(2.19) 55.6
19		10			2.250-18 UN	(2.18) 55.4	(2.44) 62.0
20		12			2.500-16 UN	(2.56) 65.0	(2.69) 68.5
21	H (29)	10	(3.33) 84.6	(4.50) 119.4	2.250-16 UN	(2.18) 55.4	(2.18) 55.4
22		12			1.500-16 UN	(2.56) 65.0	(2.44) 62.0
23	J (33)	12	(3.70) 94.0	(4.43) 128.1	2.500-16 UN	(2.56) 65.0	(2.69) 68.3
24		16			3.00-16 UN	(3.06) 77.8	(3.19) 81.0
25	A (11)	04	(2.36) 59.9	(3.50) 92.8	1.133-18 UNF	(1.25) 31.8	(1.38) 35.1

Note: All dimensions are in mm (inches)



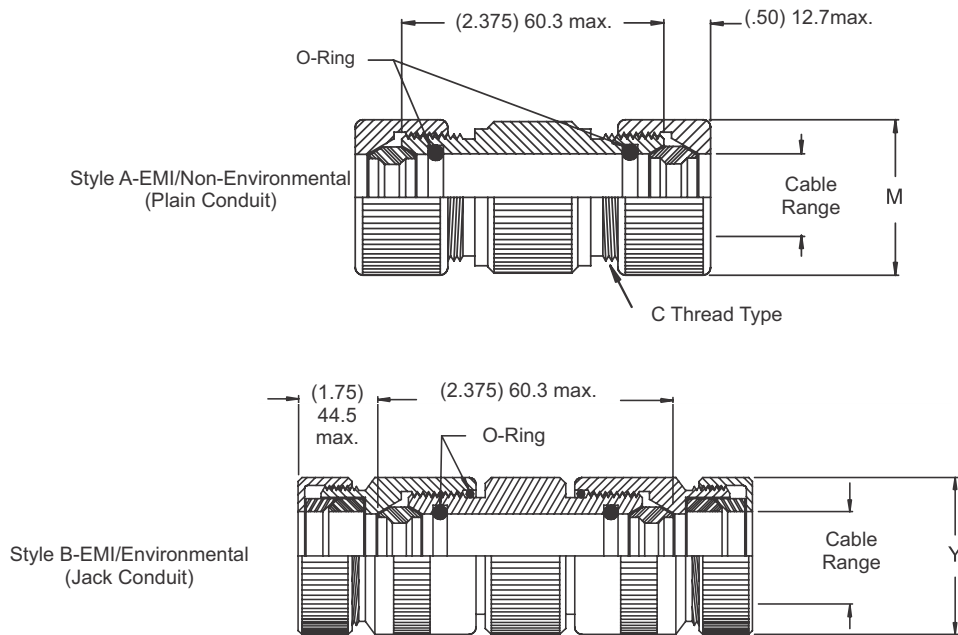
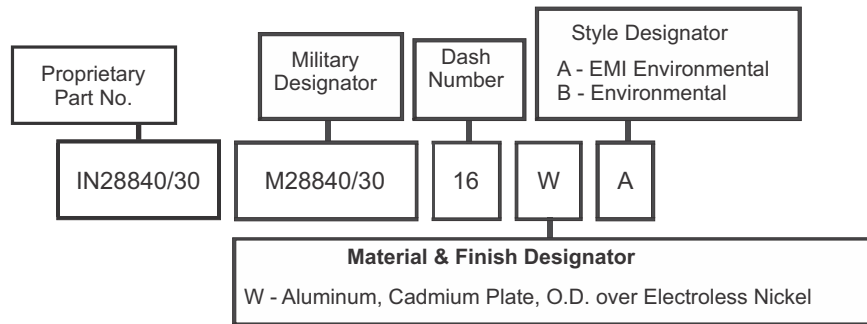
Note: All dimensions are in mm (inches)

Dash No.	Designator	A Thread Class 2B	B Max Diameter	C Thread Class 2	D Max. Diameter	Sealing Range		Conduit Size M 04	E Max. Dim.
						Max.	Min.		
01	A (11)	.750-20 UNEF	(1.028) 26.11	.875-20 UNEF	(1.031) 26.19	(.63) 16.0	(.50) 12.7	03	(2.36) 59.9
02	B (13)	.875-20 UNEF	(1.141) 28.98	.875-20 UNEF		(.63) 16.0	(.50) 12.7	03	
03				1.000-20 UNEF		(.75) 19.1	(.63) 16.0	04	
04	C (15)	1.000-20 UNEF	(1.263) 32.08	.875-20 UNEF	(1.281) 32.50	(.63) 16.0	(.50) 12.7	03	(2.56) 65.0
05				1.000-20 UNEF		(.75) 19.1	(.63) 16.0	04	
06				1.125-18 UNEF		(.88) 22.4	(.75) 19.1	05	
07				1.250-18 UNEF	(1.00) 25.4	(.88) 22.4	06		
08	D (17)	1.125-18 UNEF	(1.387) 38.23	1.125-18 UNEF	(1.531) 38.80	(.88) 22.4	(.75) 19.1	05	(2.67) 67.8
09				1.250-18 UNEF		(1.00) 25.4	(.88) 22.4	06	
10				1.625-18 UNEF		(1.38) 35.1	(1.19) 22	08	
11	E (19)	1.250-18 UNEF	(1.513) 38.43	1.125-18 UNEF		(.88) 22.4	(.75) 19.1	05	
12				1.250-18 UNEF		(1.00) 25.4	(.88) 22.4	06	
13				1.625-18 UNEF	(1.38) 35.1	(1.19) 30.2	08		
14	F (23)	1.438-18 UNEF	(1.703) 45.51	1.250-18 UNEF	(1.781) 45.24	(1.000) 25.4	(.88) 22.4	06	(3.05) 77.5
15				1.625-18 UNEF		(1.38) 35.1	(1.19) 30.2	08	
16				1.875-18 UNS		(1.63) 41.4	(1.44) 36.6	10	
17	G (25)	1.562-18 UNEF	(1.825) 46.35	1.250-18 UNEF		(1.00) 25.4	(.88) 22.4	06	
18				1.625-18 UNEF		(1.38) 41.4	(1.19) 30.2	08	
19				1.875-18 UNS	(1.43) 41.4	(1.44) 36.6	10		
20				2.125-16 UN	(1.88) 47.8	(1.63) 41.4	12		
21	H (29)	1.875-16 UNS	(2.143) 54.43	1.875-18 UNS	(2.031) 51.59	(1.63) 41.4	(1.44) 36.6	10	(3.33) 84.6
22				2.125-16 UN		(1.88) 47.8	(1.63) 41.4	12	
23	J (33)	2.062-16 UNS	(2.329) 50.16	2.125-16 UN	(2.531) 64.29	(1.88) 47.8	(1.63) 41.4	12	(3.70) 94.0
24				2.750-16 UN		(2.38) 60.5	(2.13) 54.1	16	
25	A (11)	.750-20 UNEF	(1.028) 16.11	.875-20 UNEF	(1.031) 26.19	(.75) 19.1	(.63) 16.0	04	(2.36) 59.9

Note: All dimensions are in mm (inches)

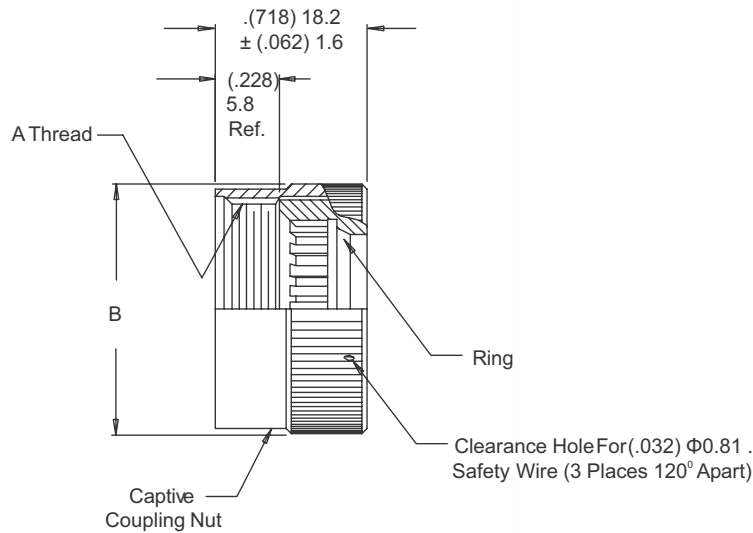
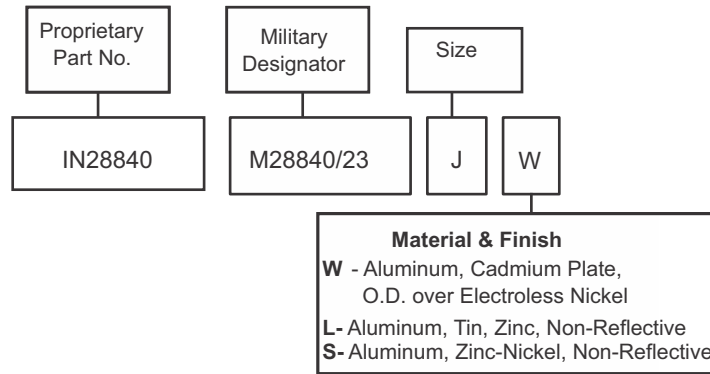
Dash Number	Designator	F Max. Dim.	V Thread Class 2	M Max. Diameter	Y Max. Diameter
1	A (11)	(3.50) 88.9	1.000-20 UNEF	(1.12) 28.5	(1.19) 30.23
2	B (13)		1.000-20 UNEF	(1.12) 28.5	(1.19) 30.23
3			1.188-18 UNEF	(1.25) 31.8	(1.38) 35.1
4	C (15)	(3.69) 93.7	1.000-20 UNEF	(1.12) 28.5	(1.19) 30.23
5			1.188-18 UNEF	(1.25) 31.8	(1.38) 35.1
6			1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
7	D (17)	(3.81) 96.7	1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
8			1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
9			1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
10			2.00-18 UNS	(1.81) 46.0	(2.19) 55.6
11	E (19)	(4.19) 106.4	1.438-18 UNEF	(1.43) 36.3	(1.63) 41.4
12			1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
13			2.00-18 UNS	(1.81) 46.0	(2.19) 55.6
14	F (23)	(4.19) 106.4	1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
15			2.00-18 UN	(1.81) 46.0	(2.19) 55.6
16			2.250-16 UN	(2.18) 55.4	(2.44) 62.0
17			1.750-18 UNS	(1.62) 41.2	(1.94) 49.3
18	G (25)	(4.50) 114.3	2.00-18 UN	(1.81) 46.0	(2.19) 55.6
19			2.250-16 UN	(2.18) 55.4	(2.44) 62.0
20			2.500-16 UN	(2.56) 65.0	(2.69) 68.3
21	H (29)	(4.50) 114.3	2.250-16 UN	(2.18) 55.4	(2.44) 62.0
22			2.500-16 UN	(2.56) 65.0	(2.69) 68.3
23	J (33)	(4.83) 122.6	2.500-16 UN	(2.56) 65.0	(2.69) 68.3
24			3.00-16 UN	(3.06) 77.8	(3.19) 81.0
25	A (11)	(3.50) 88.9	1.188-18 UNEF	(1.25) 31.8	(1.38) 35.1

Note: All dimensions are in mm (inches)



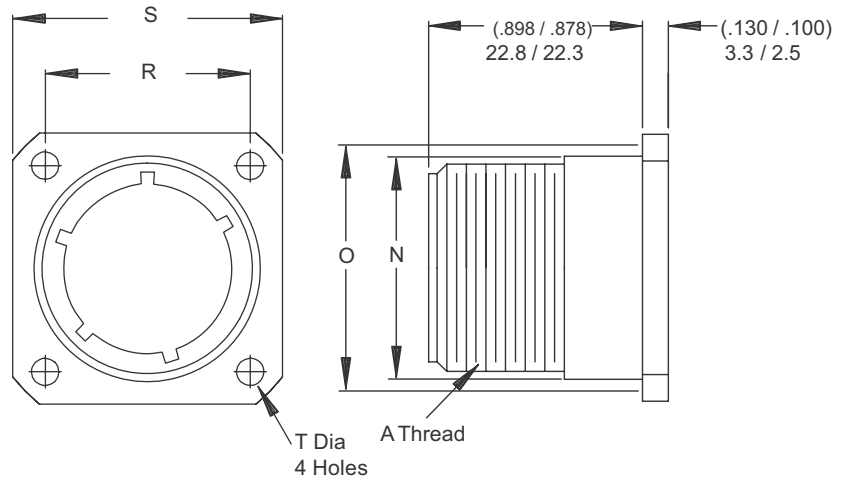
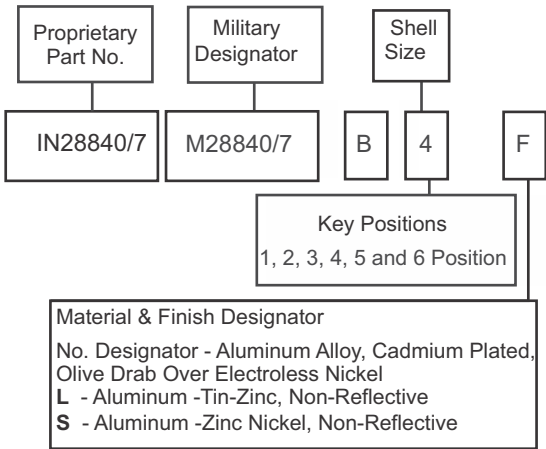
Dash Number	Conduit Size	Sealing Range		C Thread	M max. Diameter	V Thread Class 2	Y max. Diameter
		max.	min.				
03	03	(.63) 16.0	(.50) 12.7	.875-20 UNEF	(1.12) 28.5	.100-20UNEF	(1.19) 30.23
04	04	(.75) 19.1	(.63) 16.0	1.000-20 UNEF	(1.25) 31.8	1.188-18 UNEF	(1.38) 35.1
05	05	(.88) 22.4	(.75) 18.1	1.125-18 UNEF	(1.43) 36.3	1.438-18 UNEF	(1.63) 41.4
06	06	(1.00) 25.4	(.88) 22.4	1.250-18 UNEF	(1.62) 41.2	1.750-18 UNS	(1.94) 49.3
08	08	(1.38) 35.1	(1.19) 30.2	1.625-18 UNEF	(1.81) 46.0	2.00-18 UNS	(2.19) 55.6
10	10	(1.63) 41.4	(1.44) 36.6	1.875-18 UNS	(2.18) 55.4	2.250-16 UN	(2.44) 62.0
12	12	(1.88) 47.8	(1.63) 41.4	2.125-16 UN	(2.56) 65.0	2.50-16 UN	(2.69) 68.3
16	16	(2.38) 60.5	(2.13) 54.1	2.750-16 UN	(3.06) 77.8	3.00-16 UN	(3.19) 81.0

Note: All dimensions are in mm (inches)



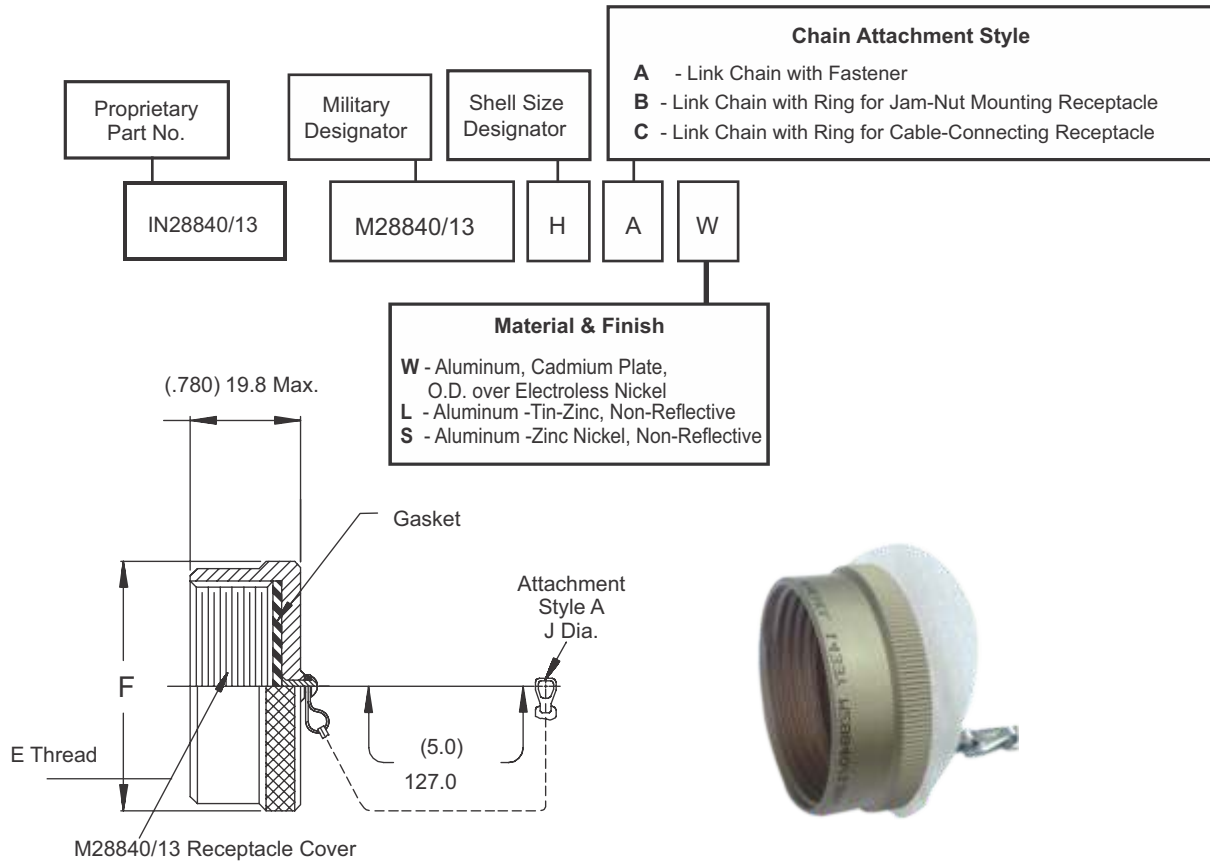
Designator	A Thread Class 2B	B Max. Diameter
A (11)	.750-20 UNEF	(1.028) 26.11
B (13)	.875-20 UNEF	(1.14) 26.11
C (15)	1.000-20 UNEF	(2.263) 32.08
D (17)	1.125-18 UNEF	(1.387) 35.23
E (19)	1.250-18 UNEF	(1.513) 38.43
F (23)	1.438-18 UNEF	(1.703) 43.51
G (25)	1.562-18 UNEF	(1.825) 46.35
H (29)	1.876-16 UN	(2.143) 54.43
J (33)	2.062-16 UNS	(2.329) 59.16

Note: All dimensions are in mm (inches)



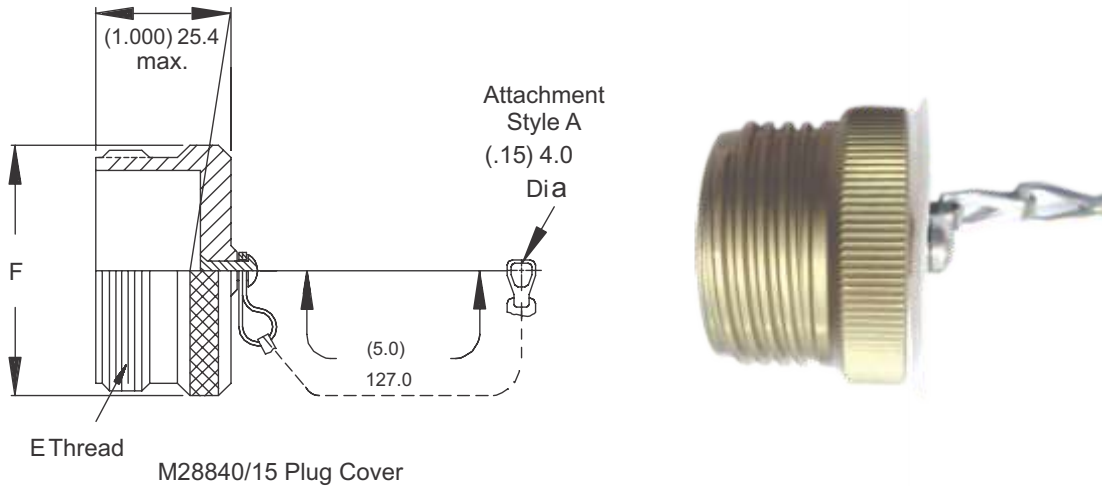
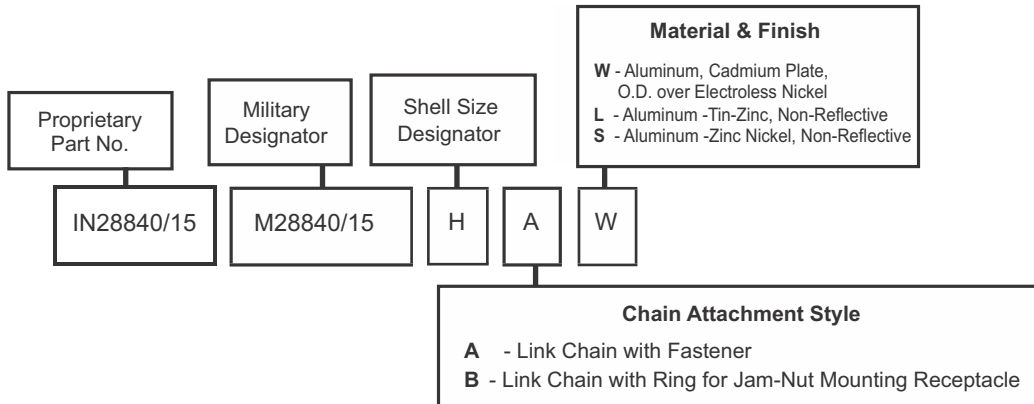
Designator	N Diameter Max.	O Reference Mating Hole	R T.P. Centerline to Centerline	S	T
A (11)	(.750) 19.05	(.812) 20.62	(.750) 19.05	(1.043) 26.49 (1.003) 25.48	(.130) 3.30 (.115) 2.92
B (13)	(.875) 22.22	(.937) 23.80	(.843) 21.41	(1.158) 29.41 (1.118) 28.40	
C (15)	(1.062) 26.97	(1.124) 28.55	(.968) 24.59	(1.278) 32.46 (1.238) 31.45	
D (17)	(1.125) 28.58	(1.187) 30.15	(1.015) 25.78	(1.403) (35.64 (1.363)34.62	
E (19)	(1.312) 33.32	(1.374) 34.90	(1.140) 28.96	(1.528) 38.81 (1.488) 37.80)	
F (23)	(1.500) 38.10	(1.562) 39.67	(1.281) 32.54	(1.738) 44.15 (1.698) 43.13	
G (25)	(1.625) 41.28	(1.687) 42.85	(1.392) 35.36	(1.838) 46.69 (1.798) 45.67	(.157) 3.99 (.142) 3.61
H (29)	(1.812) 46.02	(1.874) 47.60	(1.568) 39.83	(2.158) 54.81 (2.118) 53.80)	
J (33)	(2.000) 50.80	(2.062) 52.37	(1.734) 44.04	(2.348) 59.64 (2.308) 58.62	(.183) 4.65 (.168) 4.27

Note: All dimensions are in mm (inches)



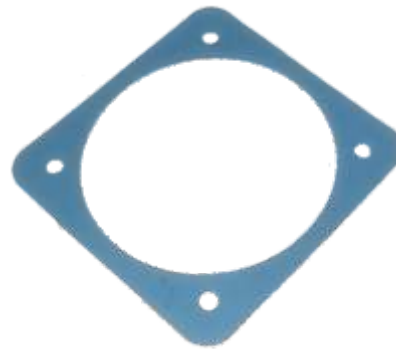
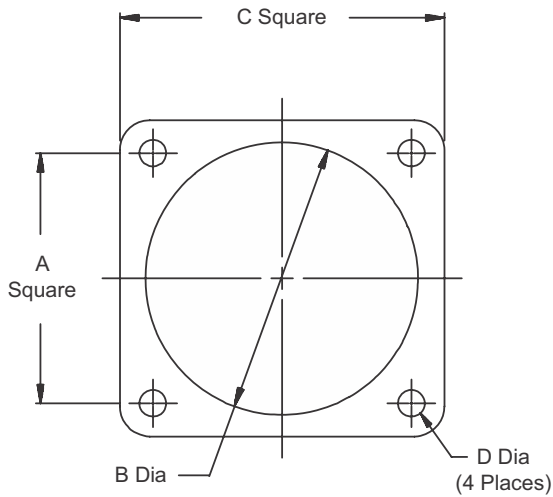
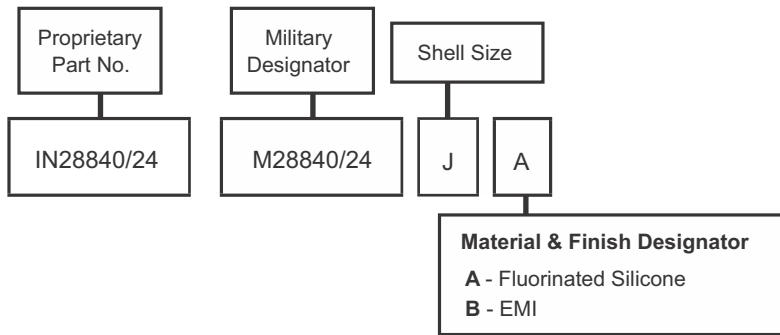
Designator	E Thread Class 2A	F Max. Diameter	H (± 0.010) (± 0.25)	J Dia (± 0.05) (± 0.13)	G (± 0.05) (± 0.13)
A (11)	.750-.1P-.2L-D.S.	(1.028) 26.21	(.890) 22.61	(.130) 3.30	(.765) 19.43
B (13)	.875-.1P-.2L-D.S.	(1.141) 23.98	(1.015) 25.78		(.890) 22.61
C (15)	1.062-.1P-.2L-D.S.	(1.263) 32.08	(1.203) 30.56		(1.015) 25.78
D (17)	1.125-.1P-.2L-D.S.	(1.387) 35.23	(1.265) 32.13		(1.140) 28.96
E (19)	1.312-.1P-.2L-D.S.	(1.513) 38.43	(1.453) 36.91		(1.265) 32.13
F (23)	1.500-.1P-.2L-D.S.	(1.703) 43.51	(1.640) 41.66		(1.453) 36.91
G (25)	1.625-.1P-.2L-D.S.	(1.825) 46.35	(1.765) 44.83	(.156) 3.96	(1.577) 40.06
H (29)	1.812-.1P-.2L-D.S.	(2.143) 54.43	(1.953) 49.61		(1.890) 48.01
J (33)	2.000-.1P-.2L-D.S.	(2.329) 59.16	(2.140) 54.36		(.193) 4.90

Note: All dimensions are in mm (inches)



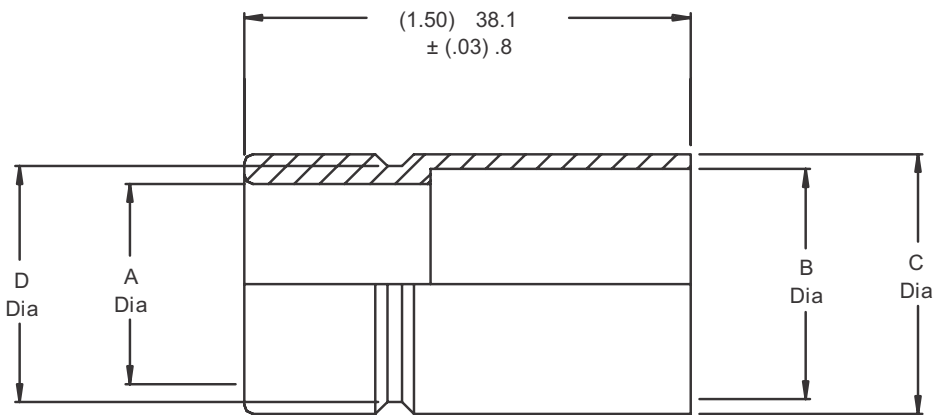
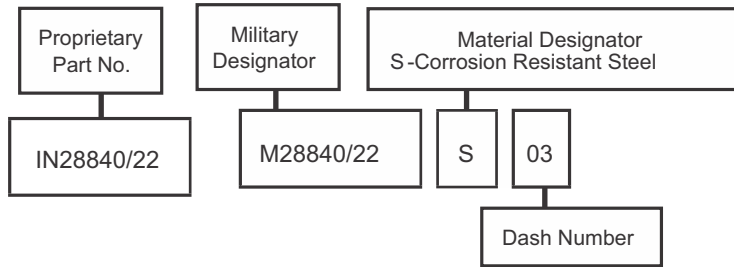
Designator	E Thread Class 2B	F Max. Diameter
A (11)	.750-1P-.2L-DS	(1.028) 26.21
B (13)	.875-1P-.2L-DS	(1.141) 28.98
C (15)	1.062-1P-.2L-DS	(1.263) 32.08
D (17)	1.125-1P-.2L-DS	(1.387) 35.23
E (19)	1.312-1P-.2L-DS	(1.108) 28.14
F (23)	1.500-1P-.2L-DS	(1.293) 32.84
G (25)	1.625-1P-.2L-DS	(1.454) 36.93
H (29)	1.812-1P-.2L-DS	(1.620) 41.15
J (33)	2.000-1P-.2L-DS	(1.812) 46.02

Note: All dimensions are in mm (inches)



Designator	A	B Dia.	C	D Dia.
A (11)	(.760) 19.30 (.740) 18.80	(.766) 19.46 (.750) 19.05	(1.039) 26.39 (1.023) 25.98	(.130) 3.30 (.110) 2.79
B (13)	(.853) 21.67 (.833) 21.16	(.891) 22.63 (.875) 22.22	(1.154) 29.31 (1.138) 28.90	
C (15)	(.978) 24.84 (.958) 24.33	(1.078) 27.38 (1.062) 26.97	(1.274) 32.36 (1.258) 31.95	
D (17)	(1.025) 26.04 (1.005) 25.53	(1.141) 28.98 (1.125) 28.58)	(1.399) 26.39 (1.383) 35.13	
E (19)	(1.150) 29.21 (1.130) 28.70	(1.338) 33.98 (1.312) 33.32	(1.524) 38.71 (1.508) 38.30	
F (23)	(1.291) 32.79 (1.271) 32.28	(1.516) 38.51 (1.500) 38.10	(1.734) 44.04 (1.718) 43.64	
G (25)	(1.402) 35.61 (1.382) 35.10	(1.641) 41.68 (1.625) 41.28	(1.834) 46.58 (1.818) 46.18	(.157) 3.99 (.137) 3.48
H (29)	(1.578) 40.08 (1.558) 39.57	(1.891) 48.03 (1.875) 47.62	(2.154) 54.71 (2.138) 54.30	
J (33)	(1.744) 44.30 (1.724) 43.79	(2.078) 52.78 (2.062) 52.37	(2.344) 59.54 (2.328) 59.13	

Note: All dimensions are in mm (inches)

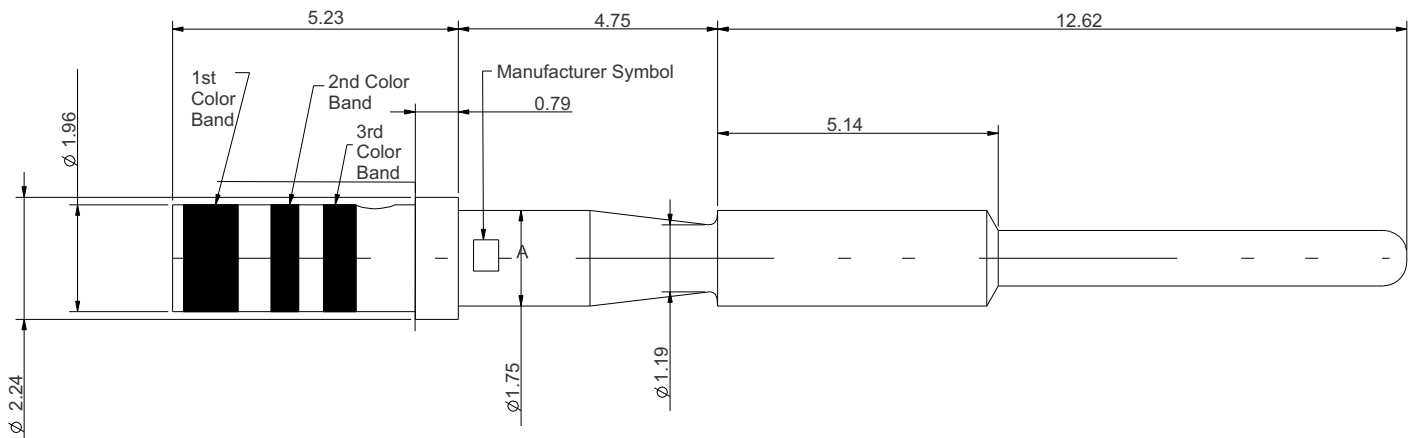
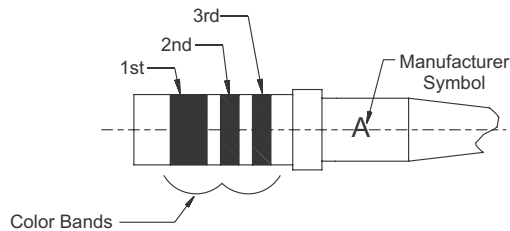


Size	MIL- DTL-28840/04 Size Ref.	A +0.5 (.02) -0.00 (.000)	B +0.12 (0.05) -0.00 (.000)	C +0.00 (.000) -0.12 (0.05)	D +0.00 (.000) - 0.12(0.05)
03	03	(.375) 9.53	(.540) 13.71	(.625) 15.87	(.525) 13.34
04	04	(.500) 12.70	(.665) 16.89	(.750) 19.05	(.650) 16.51
05	05	(.625) 15.87	(.780) 19.81	(.875) 22.23	(.775) 19.69
06	06	(.750) 19.05	(.940) 23.88	(1.000) 25.40	(.900) 22.86
08	08	(1.000) 25.40	(1.225) 31.12	(1.375) 34.93	(1.275) 32.39
10	10	(1.250) 31.75	(1.470) 37.34	(1.625) 41.28	(1.525) 38.74
12	12	(1.500) 38.10	(1.740) 44.20	(1.875) 47.65	(1.775) 45.09
16	16	(2.000) 50.80	(2.215) 56.26	(2.375) 60.33	(2.275) 57.79

Note: All dimensions are in mm (inches)

Standard Pin Crimp Contact For MIL-DTL-28840 Connectors

Mating End Size	Wire Accommodation	Military Part Number	Amphenol Part Number
20	28-32 AWG	M39029/83-451	IN39029 / 84-451
20	22-26 AWG	M39029/83-450	IN39029 / 84-452
20	20-24 AWG	M39029/83-508	IN39029 / 84-509



Material & Finish

Pin Contact: Copper Alloy per ASTM B197, 50 Micro inches Gold plated per ASTM B488 Type II Code C Class 1. 27 over nickel plate per QQ-N-290 Class 2, 50-100 micro inches.

Note: All dimensions are in mm (inches)

Table I: Contact Dimensions

Size	Amphenol Part Number	Military Number	Ø B	Ø C	Color Bands		
					1st	2nd	3rd
20	IN39029 / 84-509	M39029 / 83-508	(.050) 1.27 (.048) 1.21	(.032) 0.81 (.26) 0.66	Green	Black	Grey
20	IN39029 / 84-452	M39029 / 83-450	(.0355) 0.91 (.0355) 0.86	(.032) 0.81 (.026) 0.66	Yellow	Green	Black
20	IN39029 / 84-453	M39029 / 83-451	(.0200) 0.50 (.0180) 0.45	(.022) 0.56 (.018) 0.46	Yellow	Green	Brown

Table II: Tool Compatibility

Size	Amphenol Part Number	Military Number	AWG Handling	Crimp Tool	Positioner	Insertion Tool	Extraction Tool
20	IN39029/83-508	M39029/83-508	20, 22, 24	M22520/34-01	M22520/34-02	M81969/33-01	M81969/34-01
20	IN39029/83-450	M39029/83-450	22, 24, 26	M22520/34-01	M22520/34-02	M81969/33-01	M81969/34-01
20	IN39029/83-451	M39029/83-451	28, 30,32	M22520/34-01	M22520/34-02	M81969/33-01	M81969/34-01

Test

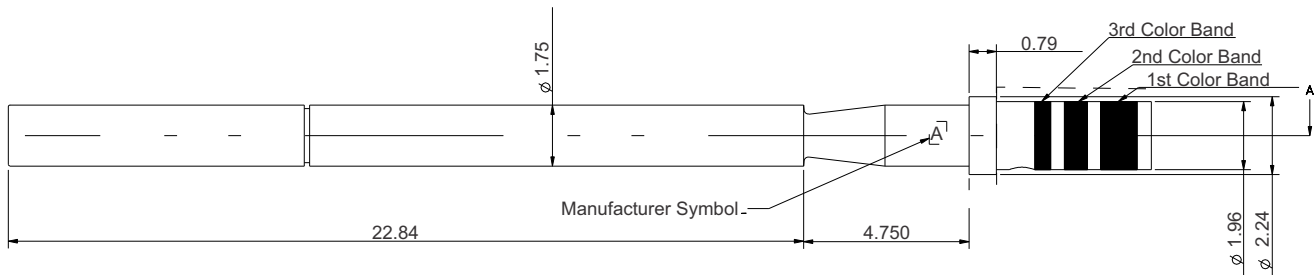
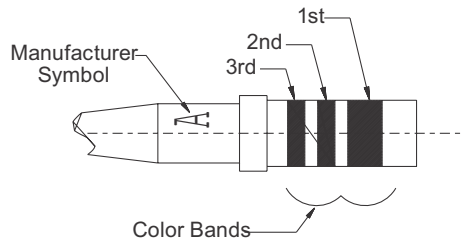
Performance Specifications

Durability	Meets SAE-AS39029, paragraph 3.5.9) No electrical or mechanical defects after 500 cycles of engagement & disengagement
Contact Retention	(Meets MIL-DTL-38999, paragraph 3.23) The axial displacement of the contact shall not exceed .012 inch (0.30 mm). No damage to contacts or inserts shall result.
Pin Engagement End	(Meets SAE-AS39029 paragraph 3.4.1) Unless otherwise specified, the mating end of all contacts (except size 22 and smaller) shall be formed with an approximate spherical radius.
Permeability	(Meets SAE-AS39029, paragraph 3.5.1) When tested as specified in paragraph 4.7.2, the relative magnetic permeability of the contact shall be no greater than 2.0.
Vibration	(Meets SAE-AS39029, paragraph 3.5.10) When contacts are tested as specified in paragraph 4.7.11, there shall be no electrical discontinuity of 1 microsecond or greater. There shall be no defects detrimental to the mechanical or electrical performance.
Salt Spray (corrosion)	(Meets SAE-AS39029, paragraph 3.5.12) When tested as specified in 4.7.13. mated contacts shall withstand 48 hours of salt spray conditioning without defects detrimental to the mechanical or electrical performance.
Temperature life	(Meets SAE-AS39029, paragraph 3.5.13) When tested as specified in paragraph 4. 7. 14, mated contacts shall withstand temperature conditioning for 1,000 hours without defects detrimental to mechanical or electrical performance. There shall be no diffusion/migration of the base metal through the contact outer plating Class A - Maximum operating temperature +125°C. per paragraph 1.2.2
Dielectric withstanding voltage	(Meets SAE-AS39029, paragraph 3.5.19) When tested as specified in paragraph 4.7.20, crimped contacts shall show no evidence of breakdown or flashover.
Workmanship	(Meets SAE-AS39029, paragraph 3.7) Contacts shall be processed in such a manner as to be uniform in quality and shall be free from foreign material & burrs or sharp corners that might damage the connector or affect mating of the contacts. Burrs & sharp edges shall be removed 0.005 inch max. (0.13mm)

Note: All dimensions are in mm (inches)

Standard Socket Crimp Contact for MIL-DTL-28840 Connectors

Mating End Size	Wire Accomodation	Military Part Number	Amphenol Part Number
20	28-32 AWG	M39029/84-453	IN39029/84-453
20	22-26 AWG	M39029/84-452	IN39029/84-452
20	20-24 AWG	M39029/84-509	IN39029/84-509



Material & Finish

Pin Contact: Copper Alloy per ASTM B197, 50 Micro inches Gold plated per ASTM B488 Type II Code C Class 1. 27 over nickel plate per QQ-N-290 Class 2, 50-100 micro inches.
 Socket Contact Hood: Stainless Steel, passivated per AMS-QQ-P-35.

Note: All dimensions are in mm (inches)

Table I: Contact Dimensions

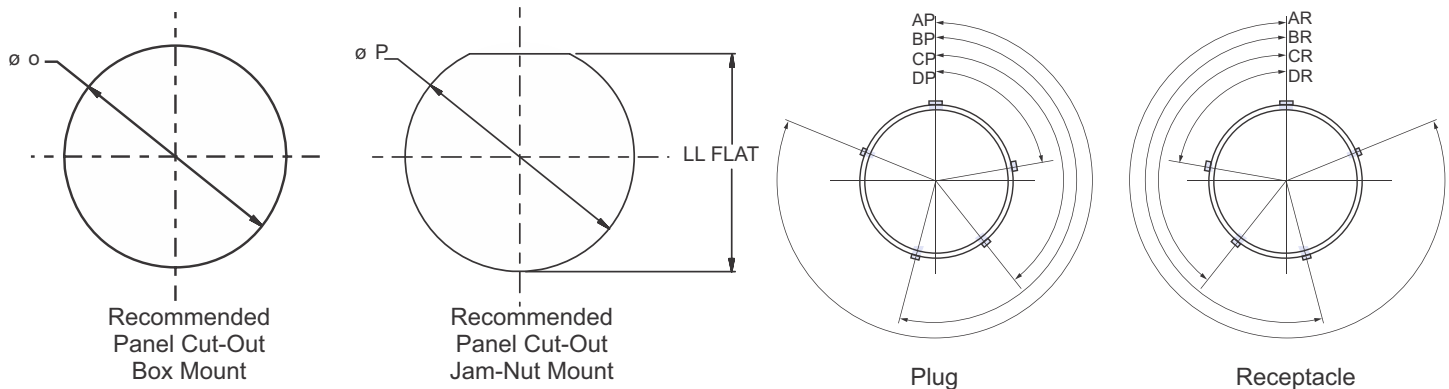
Size	Amphenol Part No.	Military Number	Ø B	Ø C	Color Bands		
					1st	2nd	3rd
20	IN39029/84-509	M39029/84-509	(.050) 1.27 (.048) 1.21	(.032) 0.81 (.026) 0.66	Green	Black	White
20	IN39029/84-452	M39029/84-452	(.0355) 0.91 (.0335) 0.86	(.032) 0.81 (.026) 0.66	Yellow	Green	Red
20	IN39029/84-453	M39029/84-453	(.0200) 0.52 (.0180) 0.45	(.022) 0.56 (.018) 0.45	Yellow	Green	Orange

Table II: Tool Compatibility

Size	Amphenol Part No.	Military Number	AWG Handling	Crimp Tool	Positioner	Insertion Tool	Extraction Tool
20	IN39029/84-593	M39029/84-509	20, 22, 24	M22520/34-01	M22520/34-02	M81969/33-01	M81969/34-01
20	IN39029/84-452	M39029/84-452	22, 24, 26	M22520/34-01	M22520/34-02	M81969/33-01	M81969/34-01
20	IN39029/84-453	M39029/84-453	28, 30, 32	M22520/34-01	M22520/34-02	M81969/33-01	M81696/34-01

Test	Performance Specifications
Durability	(Meets SAE-AS39029, paragraph 3.5.9) No electrical or mechanical defects after 500 cycles of engagement and disengagement
Contact Retention	(Meets MIL-DTL-38999, paragraph 3.23) The axial displacement of the contact shall not exceed .012 inch (0.30 mm). No damage to contacts or inserts shall result.
Pin Engagement End	(Meets SAE-AS39029 paragraph 3.4.1) Unless otherwise specified, the mating end of all contacts (except size 22 and smaller) shall be formed with an approximate spherical radius.
Permeability	(Meets SAE-AS39029, paragraph 3.5.1) When tested as specified in paragraph 4.7.2, the relative magnetic permeability of the contact shall be no greater than 2.0.
Vibration	(Meets SAE-AS39029, paragraph 3.5.10) When contacts are tested as specified in paragraph 4.7.11, there shall be no electrical discontinuity of 1 microsecond or greater. There shall be no defects detrimental to the mechanical or electrical performance.
Salt Spray (corrosion)	(Meets SAE-AS39029, paragraph 3.5.12) When tested as specified in 4.7.13, mated contacts shall withstand 48 hours of salt spray conditioning without defects detrimental to the mechanical or electrical performance.
Temperature life	(Meets SAE-AS39029, paragraph 3.5.13) When tested as specified in paragraph 4.7.14, mated contacts shall withstand temperature conditioning for 1,000 hours without defects detrimental to mechanical or electrical performance. There shall be no diffusion/migration of the base metal through the contact outer plating. Class A - Maximum operating temperature +125°C. per paragraph 1.2.2
Dielectric withstanding voltage	(Meets SAE-AS39029, paragraph 3.5.19) When tested as specified in paragraph 4.7.20, crimped contacts shall show no evidence of breakdown or flashover.
Workmanship	(Meets SAE-AS39029, paragraph 3.7) Contacts shall be processed in such a manner as to be uniform in quality and shall be free from foreign material and burrs or sharp corners that might damage the connector or affect mating of the contacts. Burrs and sharp edges shall be removed 0.005 inch maximum (0.13mm).

Note: All dimensions are in mm (inches)



Designator	P Dia.	LL Flat	O Ref. Mtg. Hole
A (11)	(.890)	(.853)	(.812) 20.62
	22.60 (.880) 22.25	21.67 (.843) 21.41	
B (13)	(1.015)	(.978)	(.937) 23.80
	25.78 (1.005) 25.53	24.84 (.968) 24.59	
C (15)	(1.203)	(1.165)	(1.124) 28.55
	30.55 (1.193) 30.3	29.59 (1.155) 29.34	
D (17)	(1.265)	(1.228)	(1.187) 30.15
	32.13 (1.255) 25.40	31.19 (1.218) 30.94	
E (19)	(1.453)	(1.415)	(1.374) 34.90
	36.91 (1.443) 36.65	35.94 1.405 35.69	
F (23)	(1.640)	(1.603)	(1.562) 39.67
	41.66 (1.630) 41.40	40.72 (1.593) 40.46	
G (25)	(1.765)	(1.728)	(1.687) 42.85
	44.83 (1.755) 44.57	43.89 (1.718) 43.64	
H (29)	(1.953)	(1.915)	(1.874) 47.60
	49.60 (1.943) 49.35	48.64 (1.905) 48.38	
J (33)	(2.140)	(2.103)	(2.062) 52.37
	54.36 (2.130) 54.10	53.42 (2.093) 53.16	

Designator	Key and Keyway Arrangement	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
A (11) B (13)	1	95	141	208	236
	2	113	156	182	292
	3	90	145	195	252
	4	53	156	220	255
	5	119	146	176	298
	6	51	141	184	242
C (15) D (17)	1	80	142	196	293
	2	135	170	200	310
	3	49	169	200	244
	4	66	140	200	257
	5	62	145	180	280
	6	79	153	197	272
E (19) F (23) G (25) H(29) J (33)	1	80	142	196	293
	2	135	170	200	310
	3	49	169	200	244
	4	66	140	200	257
	5	62	145	180	280
	6	79	153	197	272

Note: All Dimensions for reference only

Contact Insertion

1. Tools

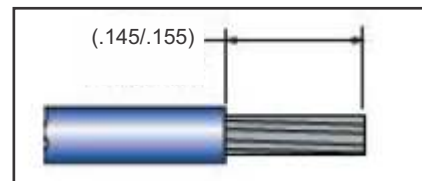
Be sure that all proper assembly tools are on hand & properly calibrated (Pic. 1)



Picture 1

2. Stripping

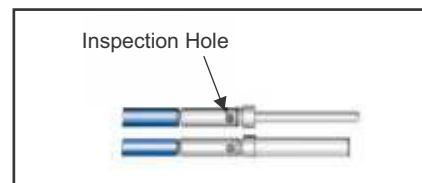
Strip wire insds to 3/16" for 20-32 AWG, taking care not to nick or cut wire strands. (Pic. 2)
Hold insulation & twist strands to eliminate any splaying.



Picture 2

3. Wire Insertion

Insert wire into crimp well of contact. Don't force. Wire strands must be visible through inspection hole (Pic. 3).



Picture 3

4. Crimping

Using crimp tool & positioner noted above insert wire & contact into locator jaws. Squeeze tool handle completely until ratchet releases. Remove wired contact from tool (Pic. 4).



Picture 4

5. Backshell Preparation

Slide backshell/strain relief over jacketed cable or wires in proper order for re-assembly. Contact factory for proper jacketed cable assembly (Pic. 5).



Picture 5

6. Contact Preparation

Slide wired contact into insertion tool of choice so that the tip of the tool butts against the shoulder of the contact. (Pic. 6).



Picture 6

1. Insertion of Contacts:

Insert wired contacts & tool into contact 'clicks' into retention clip (Pic. 7) A straight pull on the wire will assure the contact is properly seated. Note: Isopropyl alcohol may be used sparingly as a lubricant.



Picture 7

2. Assembly:

After all contacts are inserted, assemble backshell or strain relief according to Amphenol backshell catalog instructions.

Contact Extraction

1. Remove backshell or strain relief from connector.

2. Contact Extraction

MIL-DTL-28840 connector contacts are extracted from the rear but released from the front of the connector. Using an extraction tool, slide tool tip into front of contact cavity (Mating face of connector, Pic. 8) until tool tip engages against contact retention clip. Push plunger with min. force to release contact (Pic. 9). Note: Isopropyl alcohol may be used sparingly as a lubricant.



Picture 8



Picture 9

3. Contact Extraction

Pull wired contact from rear grommet of connector.

Contact Replacement

After replacing contact re-insert starting with assembly instructions number 7.

M22520/34-01 Basic Crimp Tool:

Qualified to M22520/34-01, this crimp tool prevents improper crimps and over crimping and is based on the AFM8 miniature adjustable crimp tool, it performs a modified eight impression crimp with a precision cycle controlled ratcheting mechanism for gas-tight wire terminations and excellent tensile strength. Also featured is a four-step crimp depth selector knob and is designed for use with the M22520/34-02 bayonet-type Positioner. Gaging is accomplished with the M22520/35 "Go/No-Go" Gage. The adjustment wheel has eight settings. Check calibration with the M22520/35 gage. Length is 6.75 inches, weight is approximately 10oz.

**M22520/34-02 Positioner:**

This bayonet type positioned locates and holds contacts at the correct position for crimping with the M22520/34-01 Basic Crimp Tool. The face plate shows the correct tool settings.

**M22520/35 Gauge:**

Periodic Gauging is recommended to ensure accurate calibration and is easily accomplished by setting the tool selector knob to the proper position and checking the indenter closure with the M22520/35 "Go/No-Go" Gauge.

Insertion & Removal Tools**M81969/33-01 Straight Insertion Tool:**

M81969/33-01 Straight insertion tool is approved for use on MIL-DTL-28840 connectors and features an anodized aluminium handle and SS insertion tip.

**M81969/33-01 Offset Insertion Tool:**

Approved for use on MIL-DTL-28840 connectors, the M81969/33-02 Offset Insertion Tool features an anodized aluminium handle and SS offset insertion tip.

**M81969/34-01 Removal Tool:**

Designed and approved for removal of contacts and in MIL-DTL-28840 connectors the M81969/34-01 removal tool's anodized.

Amphenol Pcd

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