

AmphenolFSI



AmphenolFSI

M28876 Fiber Optic
Connectors



TABLE OF CONTENTS

M28876 Connector Catalog

About M28876

Cable Assemblies

MIL-PRF-28876 Product Specifications

MIL-SPEC Ordering Nomenclature

COTS Ordering Nomenclature

Plug Connectors

Wall Mount Receptacles

Jam Nut Receptacles

Backshells

Dust Cover Ordering Nomenclature

Insert Arrangements

Keying Arrangements

Other Shipboard Products Termination

Kits, Tools, MQJs & Training



ABOUT M28876

M28876 Connector Series

Amphenol Fiber Systems International (AFSI) is a leading producer and supplier of M28876 connectors to the US Navy and allied navies around the world. Our stringently tolerated and precision machined connectors, manufactured at our state-of-the-art, ISO 9001:2000 certified factory in Allen, Texas, U.S.A., are designed to provide superior optical performance in the harshest of environments.

Features & Benefits

- Qualified to MIL-PRF-28876 specifications
- Low insertion loss (-0.35dB typ MM, -0.35dB typ SM)
- Compatible with single mode or multimode termini
- Full environmental sealing
- Available in 3 shell sizes
 - ♦ Shell 13 – 4 channels
 - ♦ Shell 15 – 6 channels or 8 channels
 - ♦ Shell 23 – 18 channels or 31 channels
- Available in 6 keying options (1 through 6)
- Backshells, featuring AFSI's exclusive Quickloc cable captivation system, available in straight, 45 degree and 90 degree versions
- Hybrid (COTS only) versions available
- Fully field maintainable in accordance with MIL-STD-2042

Quickloc Backshells

Our exclusive Quickloc cable captivation system can be quickly installed on virtually any military or tactical cable. Quickloc allows individual termini to be serviced, repositioned or cleaned without complete backshell disassembly. Additionally, all Quickloc components are reusable, so cable repairs are speedy and cost-effective. Quickloc is standard on all AFSI M28876 backshells.

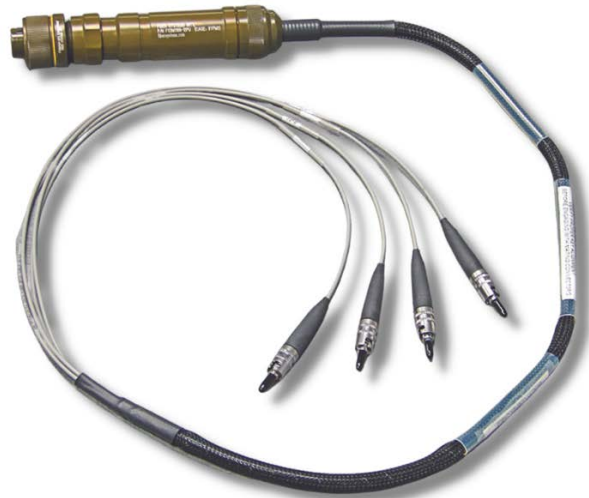


CABLE ASSEMBLIES

Amphenol Fiber Systems International (AFSI) is one of the world's leading manufacturers of harsh environment fiber optic connectors that are rugged, reliable and cost-effective. Among our valued customers are virtually every major defense company in the United States, the U.S. Army and Navy and many international defense organizations.

All AFSI cable assemblies are manufactured by expert technicians in our state-of-the-art, ISO 9001:2000 certified facility. This ensures that our processes and practices are optimized for the unique requirements of fiber optic cable assemblies rather than one-size-fits-all electrical assemblies.

Our goal is to exceed customer requirements with every cable assembly. AFSI is able to assist in designing and building custom cable assemblies or building to a customer print. Our technicians are trained to MIL-STD-2042C and a variety of other procedures critical to manufacturing harsh environment fiber optic cable assemblies. An optical test report is included with every cable built. If other tests are required, AFSI is capable of testing either in-house or contracting with one of our test laboratory partners.



MIL-PRF-28876 PRODUCT SPECIFICATIONS

Specification	Measurement/Detail
Mating Durability	500 cycles per EIA/TIA-455-21
Vibration	EIA/TIA-455-11, Test Condition II & VII, 30 minutes / Axis
Mechanical Shock	MIL-STD-901, Grade A, Class I
Thermal Shock	-40°C to +70°C, EIA/TIA-455-11, Test Condition II & VII, 30 minutes / Axis
Thermal Cycling	-5°C to +25°C, 5 cycles per EIA/TIA-455-3
Corrosion Resistance	500 hour salt spray per EIA/TIA-455-16, Test Condition I
Ozone Exposure	150 ppm for 2 hours per EIA/TIA-455-189
Humidity	240 hours @ 98% RH per EIA/TIA-455-5, Method B
Fluid Immersion	EIA/TIA-455-12
Crush Resistance	7 tests @ 1250 Newtons per EIA/TIA-455-26
Maintenance Aging	Terminus insertion and removal, 10 times
Terminus Retention Force	22 lbs for 5 seconds
Insert Retention Axial	100 psi torque for 1 minute
Cable Pull Out Force	162 lbs for 10 minutes per EIA/TIA-455-6
Cable Sealing Flexing	200 cycles at 180° flex per EIA/TIA-455-1
Impact	8 drops @ 7 feet rotated each time per EIA/TIA-455-2, Method B
Flammability	0.75 inch flame for 10 seconds mated, 1.5 inch flame for 60 seconds unmated per EIA/TIA-364-81
Operating Temperature	-28°C to +65°C
Storage Temperature	-40°C to +70°C
Insertion Loss (Multimode)	-0.35 dB typ (62.5/125)
Insertion Loss (Single Mode)	-0.35 dB typ (9/125)
Back Reflection (Single Mode)	-50 dB typ
Connector Insert	Aluminum Alloy, Anodized
Connector & Backshells	Aluminum Alloy, BHA
Cable Sealing, Strain Relief	Polyolefin, Self-Encapsulating

MIL-SPEC ORDERING NOMENCLATURE

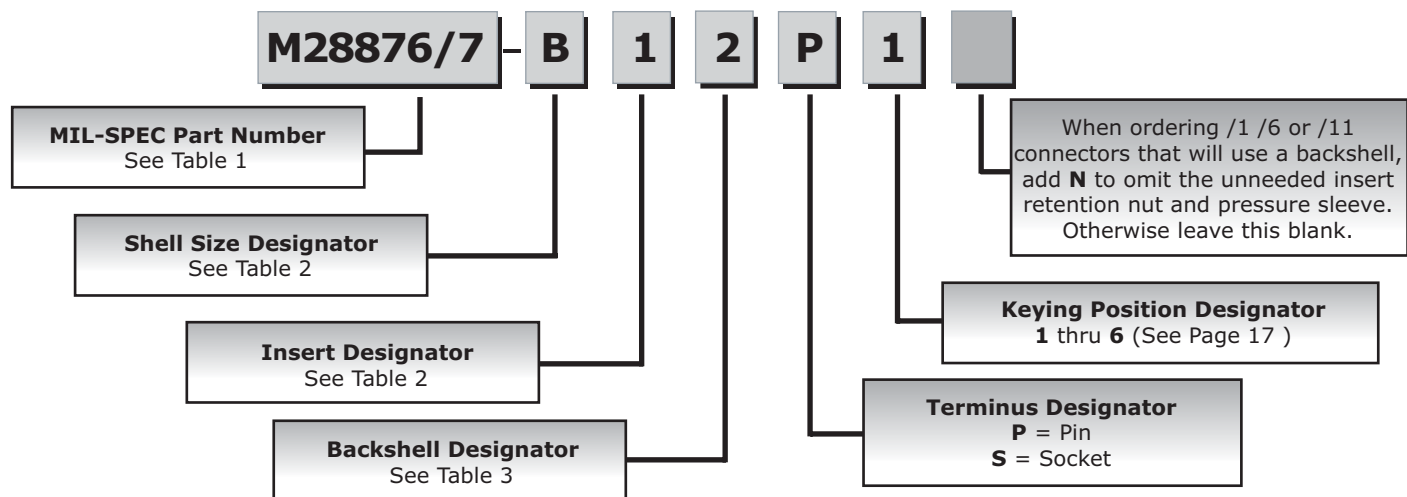


Table 1		
Connector Type	Strain Relief	MIL-SPEC Part Number
Receptacle, Wall Mount	None	M28876/1
	Straight	M28876/2
	45°	M28876/3
	90°	M28876/4
Plug	None	M28876/6
	Straight	M28876/7
	45°	M28876/8
	90°	M28876/9
Receptacle, Jam Nut	None	M28876/11
	Straight	M28876/12
	45°	M28876/13
	90°	M28876/14
Straight Backshell Assembly Only		M28876/27
45° Backshell Assembly Only		M28876/28
90° Backshell Assembly Only		M28876/29

Example Part Number - M28876/7-B12P1

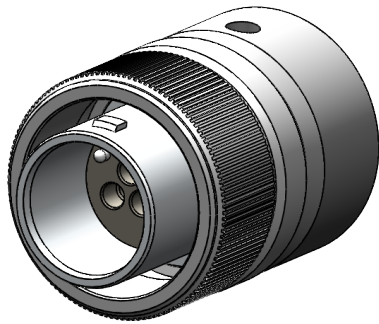
M28876/7 - Plug with Straight Backshell
B - Shell Size 13
1 - 4 Cavities
2 - 0.305-0.346 Inch Cable Diameter
P - Pin
1 - Key 1

Table 2			
Shell Size	Shell Size Designator	Insert Designator	Number of Cavities
13	B	1	4
15	C	1	8
		2	6
23	F	1	31
		2	18

Table 3			
Backshell Designator	Maximum Allowable Cable Diameter by Shell Size, Inches (mm)		
	Shell Size 13	Shell Size 15	Shell Size 23
1	0.280-0.315 (7.11-8.00)	0.495-0.515 (12.57-13.08)	0.768-0.866 (19.50-22.00)
2	0.305-0.346 (7.75-8.80)	0.380-0.423 (9.65-10.74)	0.900-1.000 (22.86-25.40)
3		0.423-0.465 (10.75-11.81)	
4		0.305-0.346 (7.75-8.80)	

COTS ORDERING NOMENCLATURE

FS34HP -Plugs



FS34HP-X XX X X X S N

SHELL SIZE DESIGNATION
(SEE TABLE II)

NO. OF TERMINUS CAVITIES
(SEE TABLE II)

INSERT DESIGNATION
S = SOCKET
P = PIN

INSERT MATERIAL
A - ANODIZED ALUMINUM
U - ULTEM (BLACK)
H - ALUMINUM HYBRID 3/5
N - NICKEL PLATED ALUMINUM

DESIGNATES THE CONNECTOR
DOES NOT REQUIRE INSERT
RETENTION NUT AND PRESSURE
SLEEVE (FOR BACKSHELL INTERFACE APPLICATION)

SHELL MATERIAL:
C - CAD PLATED ALUMINUM
A - ANODIZED ALUMINUM
S - 303 STAINLESS STEEL
R - 316 STAINLESS STEEL
N - NICKEL PLATED ALUMINUM
T - MATTE BLACK ANODIZE WITH PTFE
Z - NICKEL PLATED 316 STAINLESS STEEL
D - PTFE NICKEL PLATED ALUMINUM
B - BLACK HARD ANODIZE WITH PTFE
E - BLACK ZINC NICKEL PLATING

KEYING POSITION DESIGNATION
(SEE TABLE I)

TABLE I

SHELL SIZE	KEYING POSITION DESIGNATOR	A°	B°	C°	D°
11 & 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°
13 NON-STD ONLY	7	30°	225°		
	8	40°	236°		
	9	55°	190°		
	10	73°	185°		
	11	85°	208°		
	12	44°	215°		
15 AND 23	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°
15 AND 23 NON-STD	7	°	°		
	8	°	°		
	9	°	°		
	10	°	°		
	11	°	°		
	12	°	°		

TABLE II

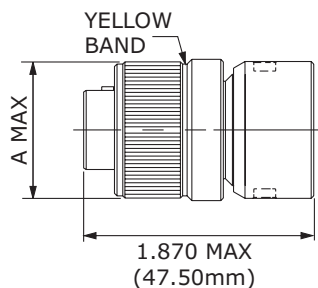
SHELL SIZE	SHELL SIZE DESIGNATOR	NO OF TERMINUS CAVITIES DESIGNATOR
11	A	02
13	B	04
15	C	06 OR 08 OR 35
23	F	18 OR 31 OR 82

TABLE III

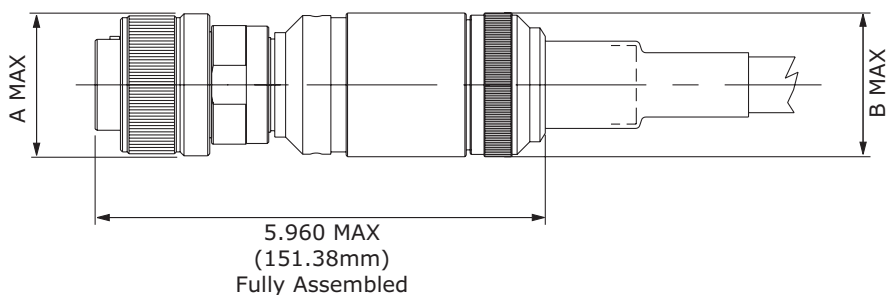
SHELL SIZE	A THREAD	ØB MAX
11	.750-20UNEF	1.028
13	.875-20UNEF	1.141
15	1.0000-20UNEF	1.263
23	1.4375-18UNEF	1.705

PLUG CONNECTORS

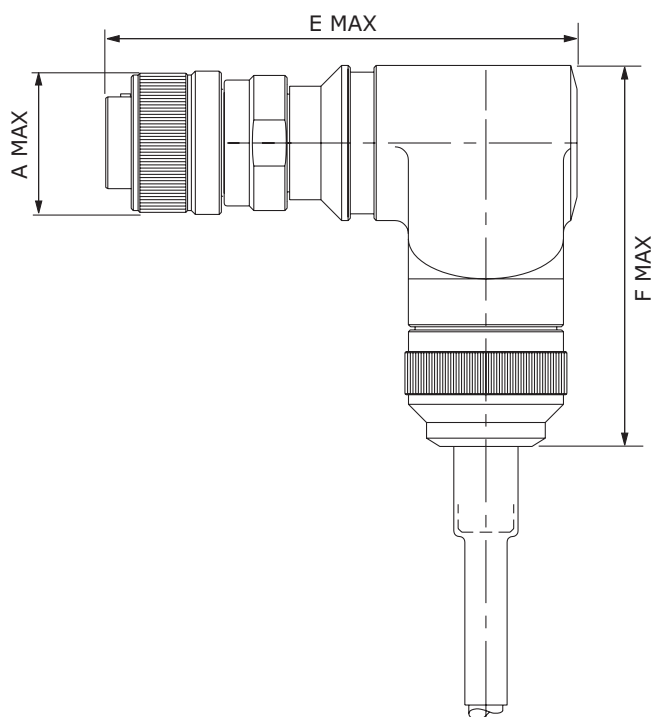
M28876/6 Plug



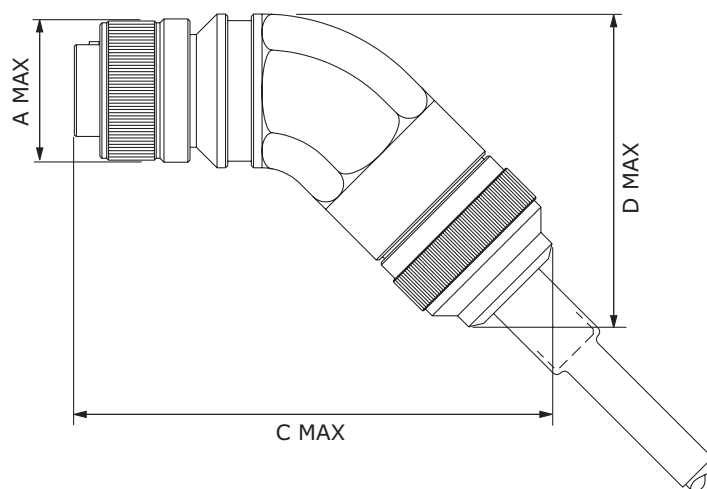
M28876/7 Plug with Straight Backshell



M28876/9 Plug with 90° Backshell



M28876/8 Plug with 45° Backshell



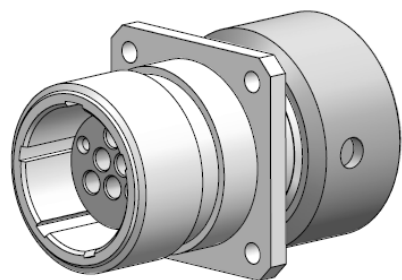
Dimension Table for Plugs

Shell Size	A MAX	B MAX	C MAX	D MAX	E MAX	F MAX
13	1.141 (28.98)	1.085 (27.56)	6.160 (156.46)	3.580 (90.93)	4.190 (106.43)	4.250 (107.95)
15	1.263 (32.08)	1.255 (31.88)	6.440 (163.58)	3.850 (97.79)	4.440 (112.78)	4.500 (114.30)
23	1.705 (43.31)	1.763 (44.78)	7.350 (186.69)	5.000 (127.00)	4.850 (123.19)	5.000 (127.00)

Dimensions are for reference only. Dimensions are in inches & (mm).

COTS ORDERING NOMENCLATURE

FS34HR - Receptacles



FS34HR-X XX X X X S N

SHELL SIZE DESIGNATION
(SEE TABLE II)

NO. OF TERMINUS CAVITIES
(SEE TABLE II)

INSERT DESIGNATION
S = SOCKET
P = PIN

DESIGNATES THE CONNECTOR
DOES NOT REQUIRE INSERT
RETENTION NUT AND PRESSURE
SLEEVE (FOR BACKSHELL INTERFACE APPLICATION)

SHELL MATERIAL:
C - CAD PLATED ALUMINUM
A - ANODIZED ALUMINUM
S - 303 STAINLESS STEEL
R - 316 STAINLESS STEEL

KEYING POSITION DESIGNATION
(SEE TABLE I)

INSERT MATERIAL:
A - ANODIZED ALUMINUM
U - ULTEM (BLACK)
H - ALUMINUM HYBRID 3/5

TABLE I

SHELL SIZE	KEYING POSITION DESIGNATOR	A°	B°	C°	D°
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°
15 AND 23	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°

TABLE II

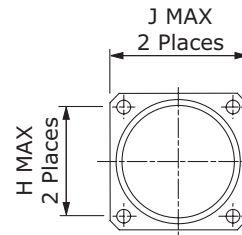
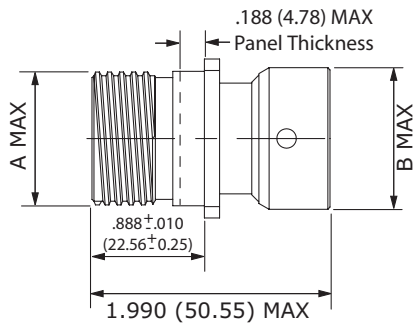
SHELL SIZE	SHELL SIZE DESIGNATOR	QTY OF TERMINUS CAVITIES	E	F	(ØG)	(ØJ)
13	B	04	1.158 1.118	.843	.130 .115	.937
15	C	06 OR 08	1.279 1.238	.968		1.124
23	F	18 OR 31	1.738 1.698	1.281		1.562

TABLE III

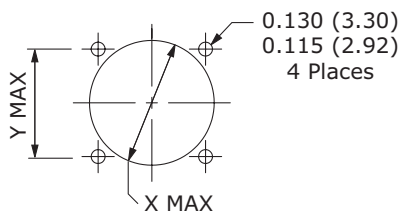
SHELL SIZE	A THREAD 2A-.1P-.2L-D.S	B THREAD
13	.875	.875-20UNEF
15	1.062	1.0000-20UNEF
23	1.500	1.4375-18UNEF

WALL MOUNT RECEPTACLES

M28876/1 Wall Mount Receptacle



Wall Mount Panel Cutout



Dimension Table for Wall Mount Receptacles
Panel Cutout

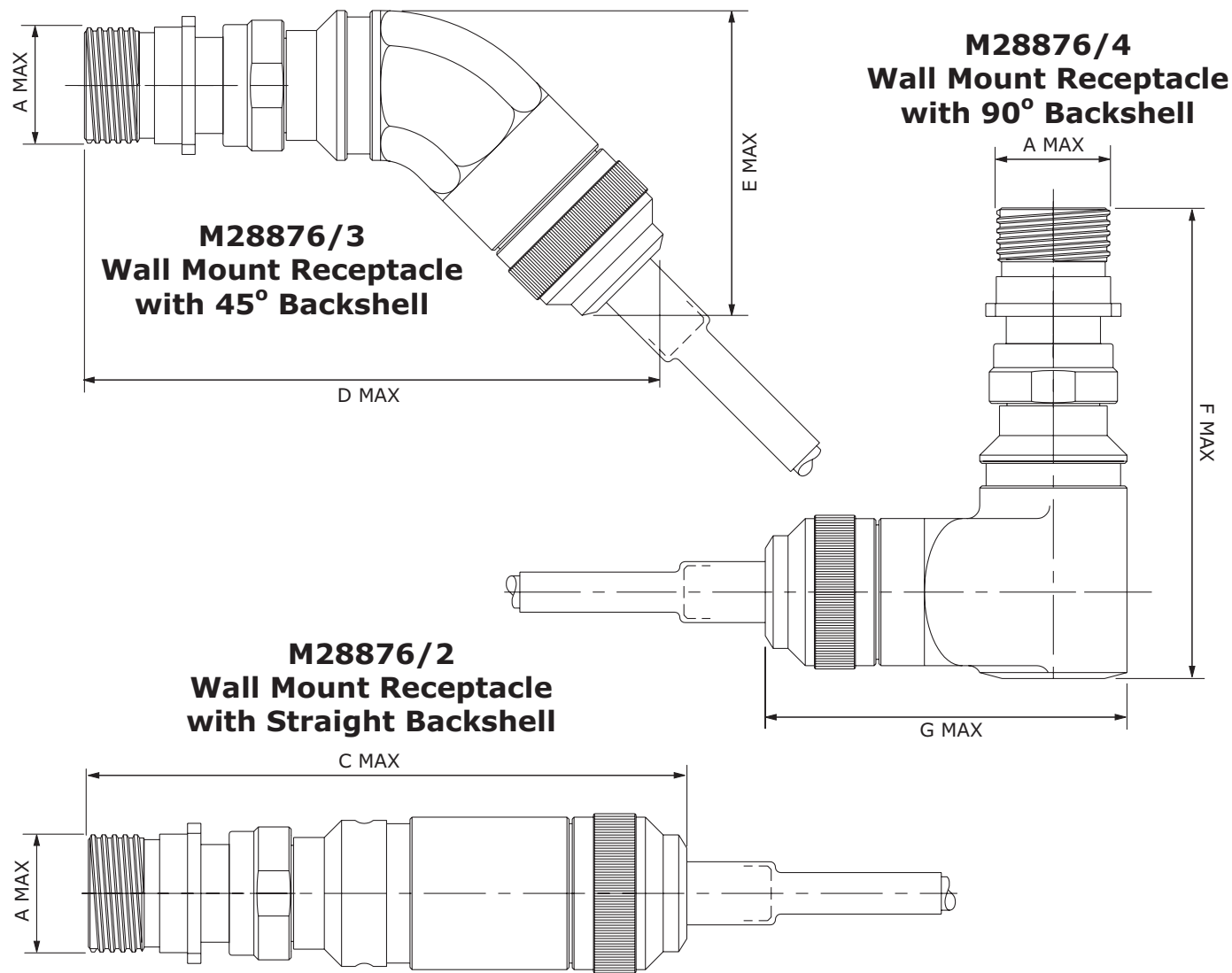
Shell Size	X ±.005 (0.13)	Y ±.005 (0.13)
13	0.937 (23.80)	0.843 (21.41)
15	1.124 (28.55)	0.968 (24.59)
23	1.562 (39.67)	1.281 (32.54)

Dimension Table for Wall Mount Receptacles

Shell Size	A MAX	B MAX	C MAX	D MAX	E MAX	F MAX	G MAX	H MAX	J MAX
13	0.875 (22.23)	1.085 (27.56)	6.150 (156.21)	6.220 (157.99)	3.580 (90.93)	4.250 (107.95)	4.250 (107.95)	0.843 (21.41)	1.158 (29.41) 1.116 (28.35)
15	1.062 (26.97)	1.257 (31.93)	6.150 (156.21)	6.500 (165.10)	3.850 (97.79)	4.500 (114.30)	4.500 (114.30)	0.968 (24.59)	1.278 (32.46) 1.236 (31.39)
23	1.500 (38.10)	1.965 (43.05)	6.150 (156.21)	7.500 (190.50)	5.000 (127.00)	5.000 (127.00)	5.000 (127.00)	1.281 (32.54)	1.738 (44.15) 1.698 (43.13)

Dimensions are for reference only. Dimensions are in inches & (mm).

WALL MOUNT RECEPTACLES



Dimension Table for Wall Mount Receptacles

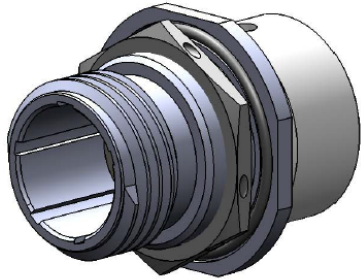
Shell Size	A MAX	B MAX	C MAX	D MAX	E MAX	F MAX	G MAX	H MAX	J MAX
13	0.875 (22.23)	1.085 (27.56)	6.150 (156.21)	6.220 (157.99)	3.580 (90.93)	4.250 (107.95)	4.250 (107.95)	0.843 (21.41)	1.158 (29.41)
									1.116 (28.35)
15	1.062 (26.97)	1.257 (31.93)	6.150 (156.21)	6.500 (165.10)	3.850 (97.79)	4.500 (114.30)	4.500 (114.30)	0.968 (24.59)	1.278 (32.46)
									1.236 (31.39)
23	1.500 (38.10)	1.965 (43.05)	6.150 (156.21)	7.500 (190.50)	5.000 (127.00)	5.000 (127.00)	5.000 (127.00)	1.281 (32.54)	1.738 (44.15)
									1.698 (43.13)

Dimensions are for reference only. Dimensions are in inches & (mm).

COTS ORDERING NOMENCLATURE

FS34HP -Jam Nut Receptacles

FS34HJ-X XX XX X X N



SHELL SIZE DESIGNATION
(SEE TABLE II)

NO. OF TERMINUS CAVITIES
(SEE TABLE II)

INSERT DESIGNATION
S = SOCKET
P = PIN

INSERT MATERIAL
A - ANODIZED ALUMINUM
U - ULTEM (BLACK)
H - ALUMINUM HYBRID 3/5
N - NICKEL PLATED ALUMINUM

N - DESIGNATES THE CONNECTOR
DOES NOT REQUIRE RETENTION NUT
AND PRESSURE SLEEVE
(FOR BACKSHELL INTERFACE APPLICATION)

BLANK - REQUIRE NUT AND SLEEVE

SHELL MATERIAL:
C - CAD PLATED ALUMINUM
A - HARD ANODIZED ALUMINUM, DARK GRAY
B - HARD ANODIZED ALUMINUM, BLACK W/PTFE
S - 303 STAINLESS STEEL
R - 316 STAINLESS STEEL
N - NICKEL PLATED ALUMINUM
Z - NICKEL PLATED 316 STAINLESS STEEL
D - PTFE NICKEL PLATED ALUMINUM
E - BLACK ZINC NICKEL PLATED ALUMINUM

KEYING POSITION DESIGNATION
(SEE TABLE I)

TABLE I

SHELL SIZE	KEYING POSITION DESIGNATOR	A°	B°	C°	D°
11 AND 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°
15 AND 23	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°

TABLE III

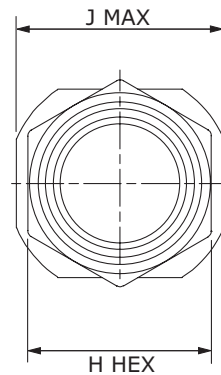
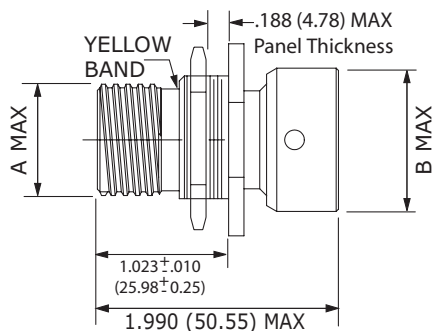
SHELL SIZE	A THREAD 2A-.1P-.2L-D.S.	B THREAD
11	.750	.750-20 UNEF
13	.875	.875-20 UNEF
15	1.062	1.0000-20 UNEF
23	1.500	1.4375-18 UNEF

TABLE II

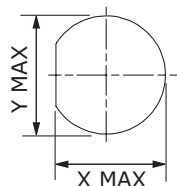
SHELL SIZE	SHELL SIZE DESIGNATOR	NO OF TERMINUS CAVITIES DESIGNATOR	E	ØF
11	A	02	.853 .843	.890 .880
13	B	04	.978 .968	1.015 1.005
15	C	06 OR 08 OR 35	1.165 1.155	1.203 1.193
23	F	18 OR 31 OR 82	1.598 1.588	1.635 1.625

JAM NUT RECEPTACLES

M28876/11 Jam Nut Receptacle



Jam Nut Panel Cutout



Dimension Table for Jam Nut Receptacles
Panel Cutout

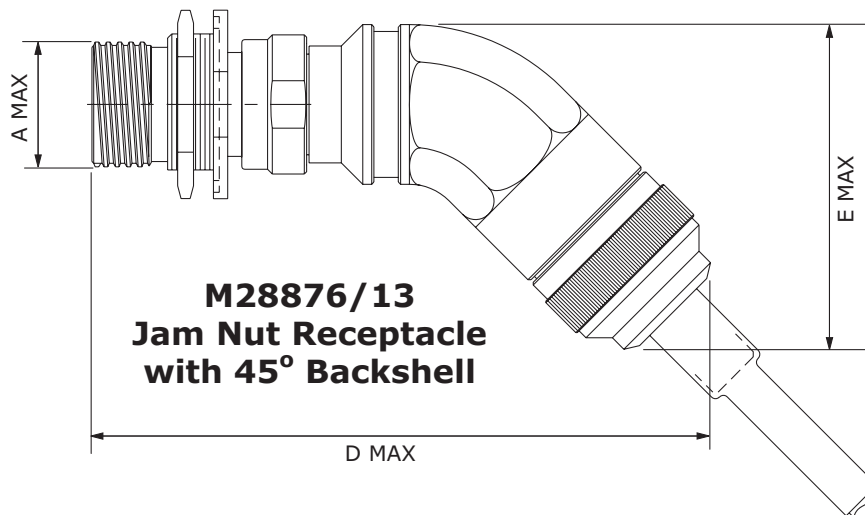
Shell Size	X ±.005 (0.13)	Y ±.005 (0.13)
13	0.973 (24.71)	1.010 (25.65)
15	1.160 (29.46)	1.198 (30.43)
23	1.593 (40.46)	1.630 (41.40)

Dimension Table for Jam Nut Receptacles

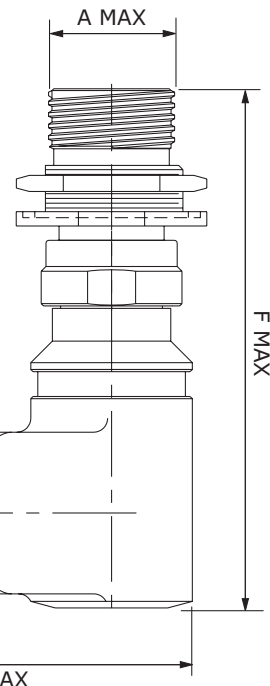
Shell Size	A MAX	B MAX	C MAX	D MAX	E MAX	F MAX	G MAX	H HEX	J MAX
13	0.875 (22.23)	1.085 (27.56)	6.150 (156.21)	6.220 (157.99)	3.580 (90.93)	4.250 (107.95)	4.250 (107.95)	1.205 (30.61)	1.399 (35.53)
								1.171 (29.74)	1.379 (35.02)
15	1.062 (26.97)	1.255 (31.88)	6.150 (156.21)	6.500 (165.10)	3.850 (97.79)	4.500 (114.30)	4.500 (114.30)	1.392 (35.36)	1.587 (40.31)
								1.358 (34.49)	1.567 (39.80)
23	1.500 (38.10)	1.703 (43.26)	6.150 (156.21)	7.500 (190.50)	5.000 (127.00)	7.500 (190.50)	5.000 (127.00)	1.812 (46.02)	2.014 (51.66)
								1.778 (45.16)	1.994 (50.65)

Dimensions are for reference only. Dimensions are in inches & (mm).

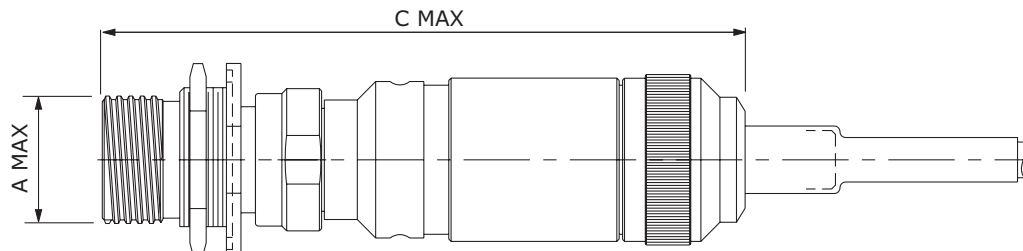
JAM NUT RECEPTACLES



M28876/14
Jam Nut Receptacle
with 90° Backshell



M28876/12
Jam Nut Receptacle
with Straight Backshell



Dimension Table for Jam Nut Receptacles

Shell Size	A MAX	B MAX	C MAX	D MAX	E MAX	F MAX	G MAX	H HEX	J MAX
13	0.875 (22.23)	1.085 (27.56)	6.150 (156.21)	6.220 (157.99)	3.580 (90.93)	4.250 (107.95)	4.250 (107.95)	0.843 (21.41)	1.158 (29.41) 1.116 (28.35)
15	1.062 (26.97)	1.257 (31.93)	6.150 (156.21)	6.500 (165.10)	3.850 (97.79)	4.500 (114.30)	4.500 (114.30)	0.968 (24.59)	1.278 (32.46) 1.236 (31.39)
23	1.500 (38.10)	1.965 (43.05)	6.150 (156.21)	7.500 (190.50)	5.000 (127.00)	5.000 (127.00)	5.000 (127.00)	1.281 (32.54)	1.738 (44.15) 1.698 (43.13)

Dimensions are for reference only. Dimensions are in inches & (mm).

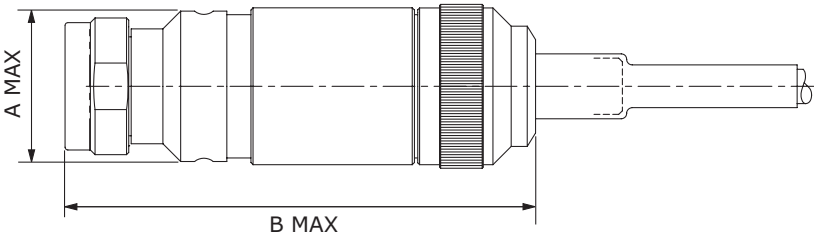
COTS ORDERING NOMENCLATURE

Backshells

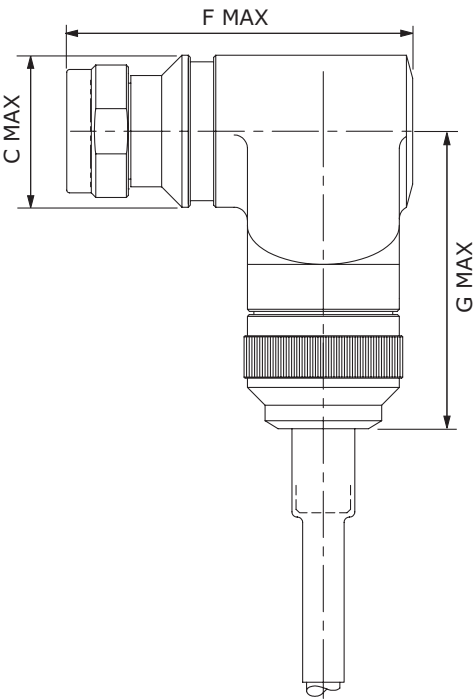
TABLE 1 PART NUMBER DEFINITION	
PART NO.	DESCRIPTION
FS34BS-#### ↑	DASH NUMBER COLUMN 1 = SHELL SIZE
FS34BS- B ###	B = SHELL SIZE 13
FS34BS- C ###	C = SHELL SIZE 15
FS34BS- F ###	F = SHELL SIZE 23
FS34BS-#### ↑	DASH NUMBER COLUMN 2 = CABLE DIA
FS34BS- # A ##	A = CABLE DIA .280/.315 (SHELL SIZE 13 ONLY)
FS34BS- # B ##	B = CABLE DIA .305/.346 (SHELL SIZE 13 ONLY)
FS34BS- # C ##	C = CABLE DIA .455 MAX (SHELL SIZE 13 ONLY)
FS34BS- # C ##	C = CABLE DIA .250/.304 (SHELL SIZE 15 ONLY)
FS34BS- # D ##	D = CABLE DIA .305/.346 (SHELL SIZE 15 ONLY)
FS34BS- # E ##	E = CABLE DIA .347/.379 (SHELL SIZE 15 ONLY)
FS34BS- # F ##	F = CABLE DIA .380/.423 (SHELL SIZE 15 ONLY)
FS34BS- # G ##	G = CABLE DIA .424/.465 (SHELL SIZE 15 ONLY)
FS34BS- # H ##	H = CABLE DIA .466/.515 (SHELL SIZE 15 ONLY)
FS34BS- # J ##	J = CABLE DIA .550/.660 (SHELL SIZE 23 ONLY)
FS34BS- # K ##	K = CABLE DIA .660/.768 (SHELL SIZE 23 ONLY)
FS34BS- # L ##	L = CABLE DIA .768/.868 (SHELL SIZE 23 ONLY)
FS34BS- # M ##	M = CABLE DIA .900/1.00 (SHELL SIZE 23 ONLY)
FS34BS- # N ##	N = CABLE DIA .347/.379 (SHELL SIZE 23 ONLY)
FS34BS- # S ##	S = HEAT SHRINK
FS34BS-#### ↑	DASH NUMBER COLUMN 3 = MATERIAL/PLATING
FS34BS- ## C #	C = CAD PLATED ALUMINUM
FS34BS- ## A #	A = ANODIZED ALUMINUM
FS34BS- ## S #	S = 303 STAINLESS STEEL
FS34BS- ## R #	R = 316 STAINLESS STEEL
FS34BS- ## N #	N = NICKEL PLATED ALUMINUM
FS34BS- ## B #	B = BLACK HARD ANODIZE WITH PTFE
FS34BS- ## Z #	Z = NICKEL PLATED 316 STAINLESS STEEL
FS34BS- ## D #	D = PTFE NICKEL PLATED ALUMINUM
FS34BS- ## E #	E = BLACK ZINC NICKEL
FS34BS-#### ↑	DASH NUMBER COLUMN 4 = BACKSHELL TYPE
FS34BS- ###	BLANK = STRAIGHT BACKSHELL
FS34BS- ### 4	4 = 45° BACKSHELL
FS34BS- ### 9	9 = 90° BACKSHELL
FS34BS- ### H	H = HEAT SHRINK BACKSHELL WITH SLEEVE

BACKSHELLS

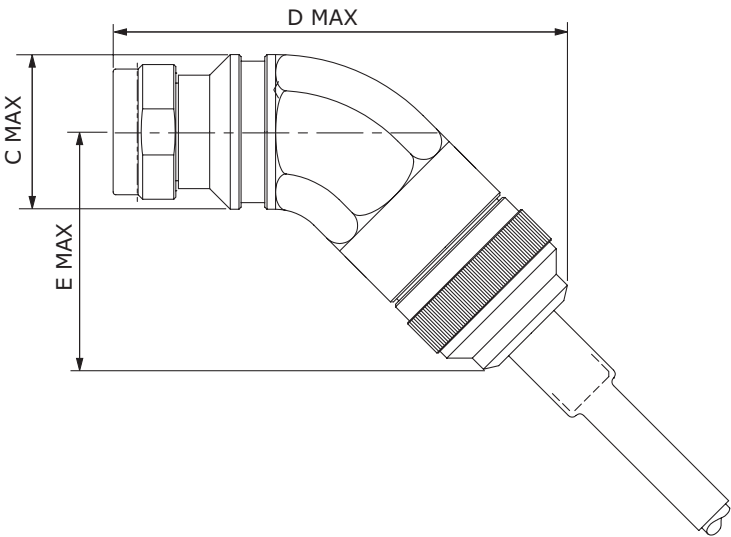
M28876/27
Straight Backshell



M28876/29
90° Backshell



M28876/28
45° Backshell



Dimension Table for Backshells

Shell Size	A MAX	B MAX	C MAX	D MAX	E MAX	F MAX	G MAX
13	1.20 (30.50)	4.00 (101.60)	1.20 (30.50)	3.20 (81.28)	3.20 (81.28)	3.20 (81.28)	3.10 (78.74)
15	1.50 (38.00)	4.70 (119.38)	1.30 (33.00)	3.20 (81.28)	3.20 (81.28)	3.20 (81.28)	3.10 (78.74)
23	2.250 (57.15)	6.50 (165.10)	2.25 (57.15)	6.50 (165.10)	4.20 (106.68)	5.000 (165.10)	4.20 (106.68)

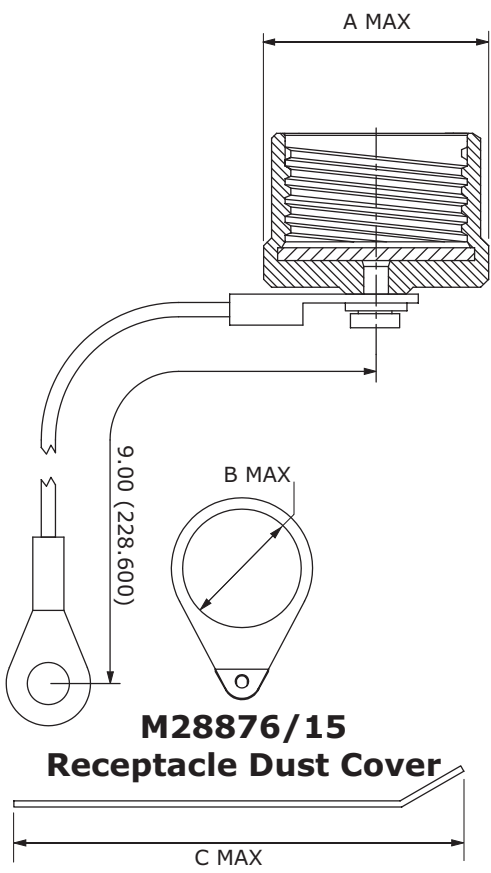
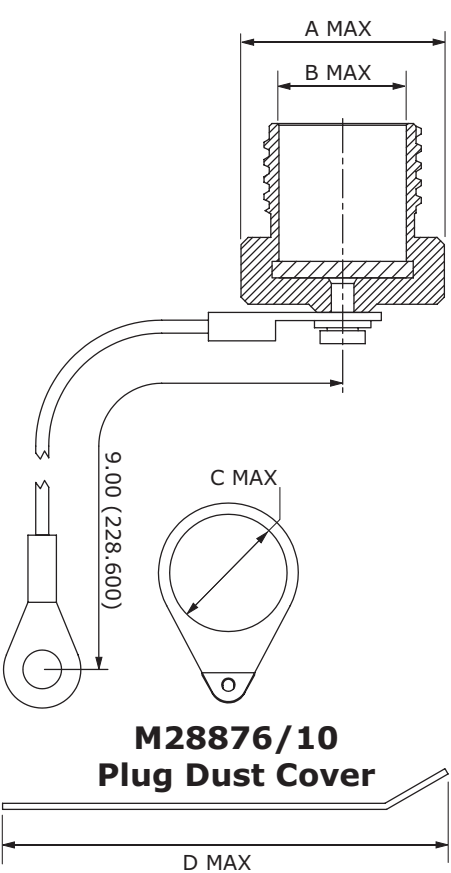
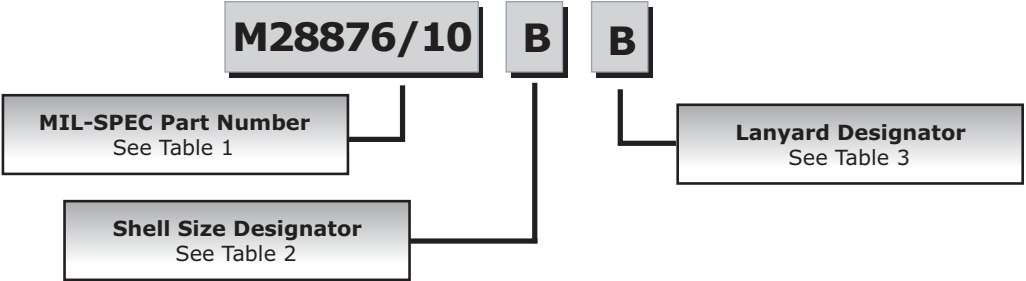
Dimensions are for reference only. Dimensions are in inches & (mm).

DUST COVER ORDERING NOMENCLATURE

Table 1	
MIL-SPEC Part Number	
M28876/10	Plug Dust Cap
M28876/15	Receptacle Dust Cap

Table 2	
Shell Size	Shell Size Designator
13	B
15	C
23	F

Table 3	
Lanyard Style	
A	Chain w/fastener
B	Chain w/ring
C	Rope w/fastener
D	Rope w/ring
E	Dust Cap Only



Dimension Table for Plug Dust Caps

Shell Size	A MAX	B MAX	C MAX	D MAX
13	1.141 (28.98)	0.705 (17.90)	0.900 (22.86)	1.800 (45.72)
		0.693 (17.60)	0.880 (22.35)	
15	1.263 (32.08)	0.877 (22.27)	1.025 (26.03)	1.950 (49.53)
		0.865 (21.97)	1.005 (25.53)	
23	1.703 (43.26)	1.299 (32.99)	1.463 (37.16)	2.483 (63.07)
		1.287 (32.69)	1.443 (36.65)	

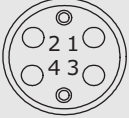
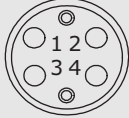
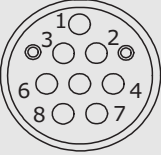
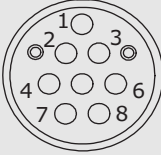
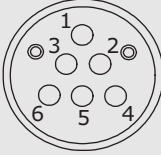
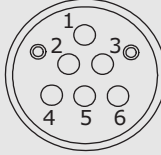
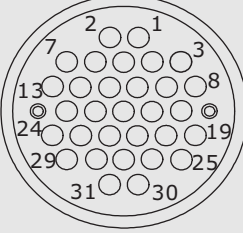
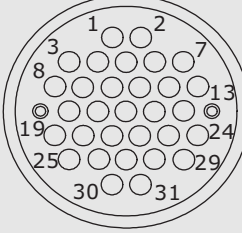
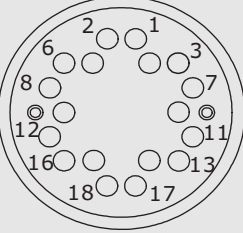
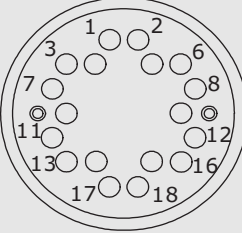
COTS version available in stainless steel. Please call for information.

Dimension Table for Receptacle Dust Caps

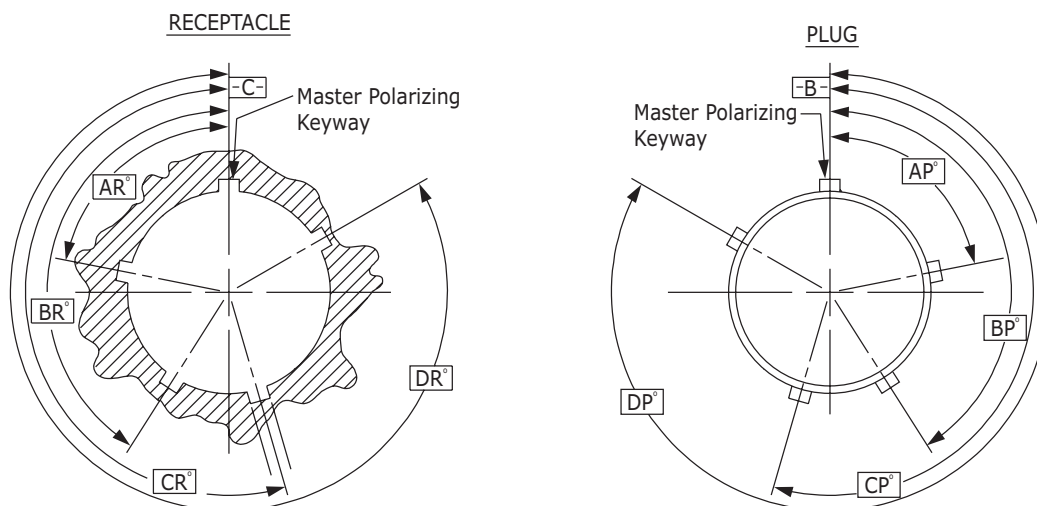
Shell Size	A MAX	B MAX	C MAX
13	1.141 (28.98)	1.025 (26.03)	1.950 (49.53)
		1.005 (25.53)	
15	1.263 (32.08)	1.215 (30.86)	2.050 (52.07)
		1.195 (30.35)	
23	1.703 (43.26)	1.650 (41.91)	2.690 (68.33)
		1.630 (41.40)	

Dimensions are for reference only. Dimensions are in inches & (mm).

INSERT ARRANGEMENTS

		Pin Face	Socket Face
Shell Size: 13 Shell Size Designator: B Arrangement Number: 1 Number of Termini: 4 Termini Size: 16			
Shell Size: 15 Shell Size Designator: C Arrangement Number: 1 Number of Termini: 8 Termini Size: 16			
Shell Size: 15 Shell Size Designator: C Arrangement Number: 2 Number of Termini: 6 Termini Size: 16			
Shell Size: 23 Shell Size Designator: F Arrangement Number: 1 Number of Termini: 31 Termini Size: 16			
Shell Size: 23 Shell Size Designator: F Arrangement Number: 2 Number of Termini: 18 Termini Size: 16			

KEYING ARRANGEMENTS



Shell Sizes	Key & Keyway Arrangements	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
13	U*	—	—	—	—
	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
15	U*	—	—	—	—
	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
23	U*	—	—	—	—
	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

*U indicates universal keying arrangement and is available on commercial equivalent connector only (COTS) .

OTHER SHIPBOARD PRODUCTS



M29504 /14 & /15 Termini

Features & Benefits

- Pre-radius zirconia ferrule tip provides optimal insertion loss performance
- Laser marked TICC codes eliminate the need to decipher complex color code bands
- Precision ferrule alignment with captivated split zirconia sleeves
- Wide configuration selection
- Superior optical performance
- Custom sizes available (Commercial-off-the-Shelf only)
- Integrated environmental seal on each terminus
- Precision “press fit” terminus design
- Each terminus individually packaged and labeled for ease of identification, storage and use

Applications

- US Navy shipboard, surface and submarine, mission critical combat and communication systems
- Mobile tactical shelters and electronic battlefield networks

Materials

- Ferrule: zirconia ceramic
- Terminus body: stainless steel, passivated
- Retention clip: beryllium copper
- Alignment sleeve: ceramic
- Alignment sleeve hood: beryllium copper
- O-ring seal: fluorosilicone



Military Grade ST Connectors (MIL-C-83522)

Features & Benefits

- Stainless steel body with zirconia ceramic ferrule and fungus-resistant self-extinguishing boot
- Superior optical performance in extreme environmental conditions
- Mil-qualified series: high spring force for shock and vibration resistant critical in military applications
- Navy approved COTS series: for moderate shock and vibration environments
- RoHS compliant

Applications

- US Navy shipboard, surface and submarine, mission critical combat and communications systems
- Mobile tactical shelters
- Electronic battlefield networks
- Deployable outdoor, harsh environment

Materials

- Ferrule: zirconia
- Body: stainless steel
- Boot: fungus resistant, self-extinguishing thermoplastic



FS12 Pierside

Features & Benefits

- Hermaphroditic design
- Rugged design handles the rigors of deployment and harsh environment conditions
- Environmentally sealed connector
- Military qualified MIL-PRF-29504 /14 & /15 termini
- Removable insert cap
- Captive insert cap screw
- Sealed termini keep the optical path clear
- Field repairable using existing parts

Applications

- Umbilical cables used to interface between shore and ship networks
- U.S. Army, Navy, Air Force and Marine Corps tactical and strategic deployments
- Oil, gas and geoscience industries
- Industrial
- Broadcast

Materials

- Aluminum
- Other materials available

Finish

- Grey anodize
- Olive cadmium
- Other finishes available



Optical-Electrical Hybrid

Features & Benefits

- Designed IAW MIL-PRF-28876
- Available in 3 shell sizes: 13 (4 ch), 15 (6, 8 ch), 23 (18, 31 ch)
- Inserts are interchangeable from plug to receptacle. Either can be operated with pins or socket termini
- Operates with all qualified single mode or multimode M29504/14 and /15 termini
- Complete line of straight, 45 degree and 90 degree backshells

Applications

- Shipboard/Pierside
- Land tactical
- Mining
- Oil, gas and geoscience industries
- Industrial
- Broadcast

Materials

- Aluminum
- Stainless steel
- Brass
- Other materials available

Finish

- Black anodize
- Other finishes available

TERMINATION ITS, TOOLS, MQJs & TRAINING



Termination Kits & Tools

Amphenol Fiber Systems International (AFSI) offers kits for terminating most optical connectors in several markets today. These termination kits include: M28876; MIL-ST; M28876/MIL-ST combination; TFOCA and TFOCA-II®. AFSI also offers customized kits. Additionally, we sell cleaning and consumable kits and individual tools to replace broken or misplaced tools.

Measurement Test Cables (MTC)

This product series is designed to meet the highest industry and military standards for testing optical components. These products allow technicians to test and certify their work to the most exacting standards. Our unique fabrication and certification process ensures that only the highest quality, low loss and tight tolerance components are “Certified.” MTC product line includes TFOCA, TFOCA II®, TFOCA-III® and our MIL-STD-2042B “MQJ.”



Measurement Quality Jumpers (MQJs)

Measurement Quality Jumpers (MQJs) are used to assess the performance parameters of standard fiber optic cables. MQJs, which are considered calibrated test equipment, are used as reference standards for fiber optic cables and components. AFSI's MQJs are built to the highest quality standards with the industry's most stringent end face geometry and high-precision polishing requirements. Each MQJ is subjected to extensive testing and verification in AFSI's in-house test facility prior to shipment to customers. AFSI's MQJs are manufactured and assembled in-house with our fully qualified M28876, M83522 and M29504 connectors and termini.



MIL-STD-2042C Training

(Pending NAVSEA Compliance)

AFSI's MIL-STD-2042C based shipboard training course is designed for persons involved in the installation, testing, troubleshooting or maintenance of shipboard fiber optic interconnect systems. Focusing on the M28876 and M83522, EIA/TIA 604-3 (SC) connectors, this class is ideal for all those responsible for the maintenance and installation of shipboard fiber optic networks and is a must-attend course for those who must follow the practices, procedures and specifications as outlined in the MIL-STD-2042C.

Successful completion of the five-day course and test qualifies the student to receive a certification from AFSI on the M28876 connector.

We are also certified by the Electronics Technicians Associations (ETA) to offer the Fiber Optics Installer (FOI) and the Fiber Optics Technician (FOT) certifications for an additional cost.



Amphenol advantage



Amphenol Military & Aerospace Operations is perfectly aligned to provide the latest technologies, cost-effective manufacturing and supply chain management, and local support to solve any military and aerospace interconnect need.

Global footprint, local support:

With 21 divisions in North America, Europe, and Asia, we can provide a local, regional presence to design and build any interconnect solution.

Cost-effective partnerships:

AMAO utilizes a vertically integrated supply chain to flow down the most competitive costs to our customers, even on the most complex solutions.

Manufacturing versatility:

Many AMAO interconnect solutions have dual production locations and off-set options which means our customers benefit from low-cost options without the fear of a single-source position.

Technology proliferation from other Amphenol divisions:

As the second largest interconnect company in the world, we're highly diversified and can provide our proven COTS technology from the antennas, sensors, industrial, and automotive markets to the military and aerospace world.

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Amphenol Times Microwave, Inc.

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