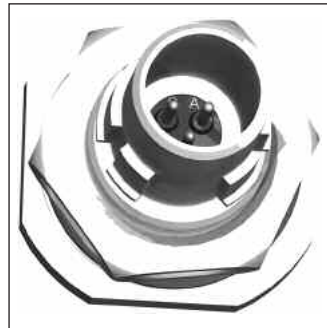
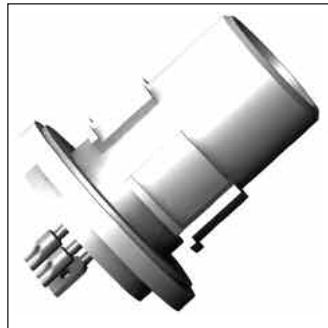


Conesys Europe Hermetic Connectors

AE4 Series per MIL-DTL-38999 Series IV



MIL-DTL-38999 S IV

Features and Application

AE4 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-38999 Series IV.

AE4 Series connectors are scoop-proof with breech coupling, designed to give a quick disconnect coupling mechanism to an already rugged connector.

AE4 Series hermetic receptacle connectors are intermateable and interchangeable with all other qualified MIL-C-38999 Series IV connectors.

Square flange, jam nut, solder mount and weld mount receptacles are available in 8 shell sizes and insert arrangements utilizing sizes 22D, 20, 16, 12, and 8 contacts.

Customer specific design can be proposed for special applications – Consult factory for details.

These hermetic connectors are available in stainless steel material both passivated and nickel plated. Other materials can be proposed for special applications – Please consult factory.

MIL-STD-1560 Insert Arrangement – AE4 Series hermetic connectors use standard insert arrangement.

Customer Specific Insert Arrangement – AE4 Series hermetic connectors can be proposed with special insert arrangement – Please consult factory.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – These hermetic connectors are designed with sintered compression glass as an insulator.



AE4 Series Hermetic Connectors per MIL-DTL-38999 Series IV



Performance Specifications

Operating Temperature Range

Classes Y and N : -65°C to +200°C (-85°F to +392°F)

Material and Finish Data (Class)

Class Y:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class N:

RECEPTACLE	material:	stainless steel
	finish:	nickel plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance

Class Y: 500 hours as per MIL-DTL-38999

Class N: 48 hours as per MIL-DTL-38999

Durability

Minimum of 500 mating cycles.

Leakage

$< 1.10^{-7}$ atm.cm³.s⁻¹.

Shock and Vibration

Shock: Pulse of approximate half sine wave of 300 g ± 15% magnitude with duration of 3 ± 1 milliseconds applied in three axes. Vibration: as per MIL-DTL-38999.

Shell-to-Shell Conductivity

Maximum potential drop shall not exceed:

Class N: 1 millivolt

Classes Y: 50 millivolts

Insulation Resistance

>5000 M Ω under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage

At sea level:

Service M: 1300 V RMS

Service I: 1800 V RMS

Service II: 2300 V RMS

At 21 000 m altitude:

Service M: 800 V RMS

Service I: 1000 V RMS

Service II: 1000 V RMS

Maximum Current Rating per Contact

Size 22D 3 Amp

Size 20 5 Amp

Size 16 10 Amp

Size 12 17 Amp

Size 8 40 Amp





Military and Conesys Part Number Development

Mil. Prefix	D38999/	41	Y	D	19	P	N	
Conesys Prefix	AE4	41	Y	D	19	P	N	-XXX
Shell Type (specification sheet number)								
41 = Wall mount receptacle								
43 = Jam nut receptacle								
45 = Solder mount receptacle								
47 = Weld mount receptacle								
Class (Material and Finish)								
Y = Shell – stainless steel, passivated								
= Terminals – ferrous alloy, gold plated								
N = Shell – stainless steel, nickel plated								
= Terminals – ferrous alloy, gold plated								
Shell Size								
B, C, D, E, F, G, H, or J								
Insert Arrangement								
See pages 47–50								
Contact Style (pin only)								
P = Pin with solder cup								
X = Pin with eyelet								
C = Pin tail (for PCB)								
Polarization (keying)								
N = Normal								
A, B, C, D, or E for alternatives								
Modification or Particularities (applies to Conesys part numbers only)								
XXX = Modification								
Consult factory for details								

MIL-DTL-38999 S IV



AE4 Series
Hermetic Connectors
per MIL-DTL-38999 Series IV



Terminal Configuration



Terminal Style P

Solder cup
Available in size 22, 20, 16, 12, and 8
For other sizes, please consult factory.



Terminal Style X

Eyelet
Available in size 22, 20, and 16
For other sizes, please consult factory.

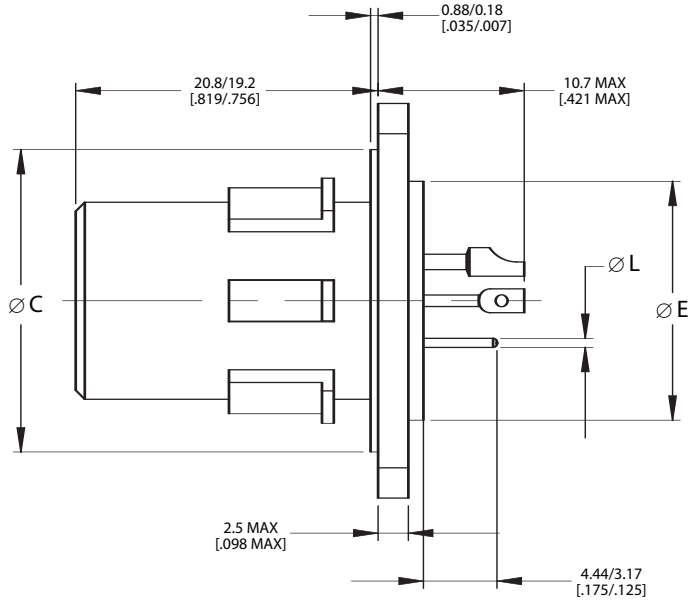
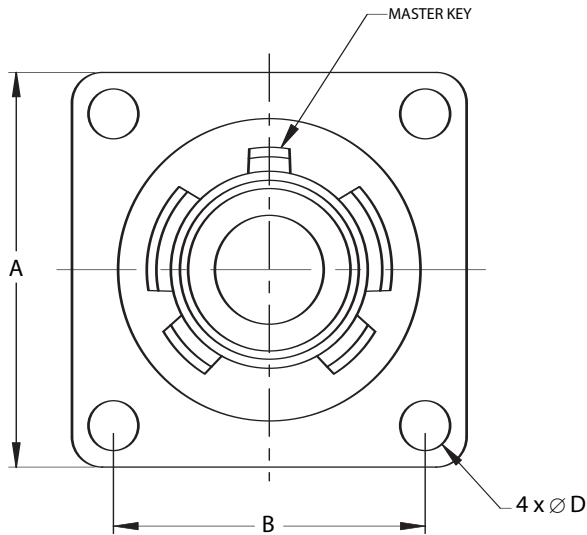


Terminal Style C

Pin tail for PCB
Available in size 22, 20, and 16
For other sizes or lengths, please consult factory.



MIL-DTL-38999 S IV



Contact Size	Ø L	
	mm	inch
22D	0.28	.011
	0.38	.015
20	0.60	.024
	0.70	.028
16	1.56	.061
	1.61	.063
12	2.36	.093
	2.41	.095

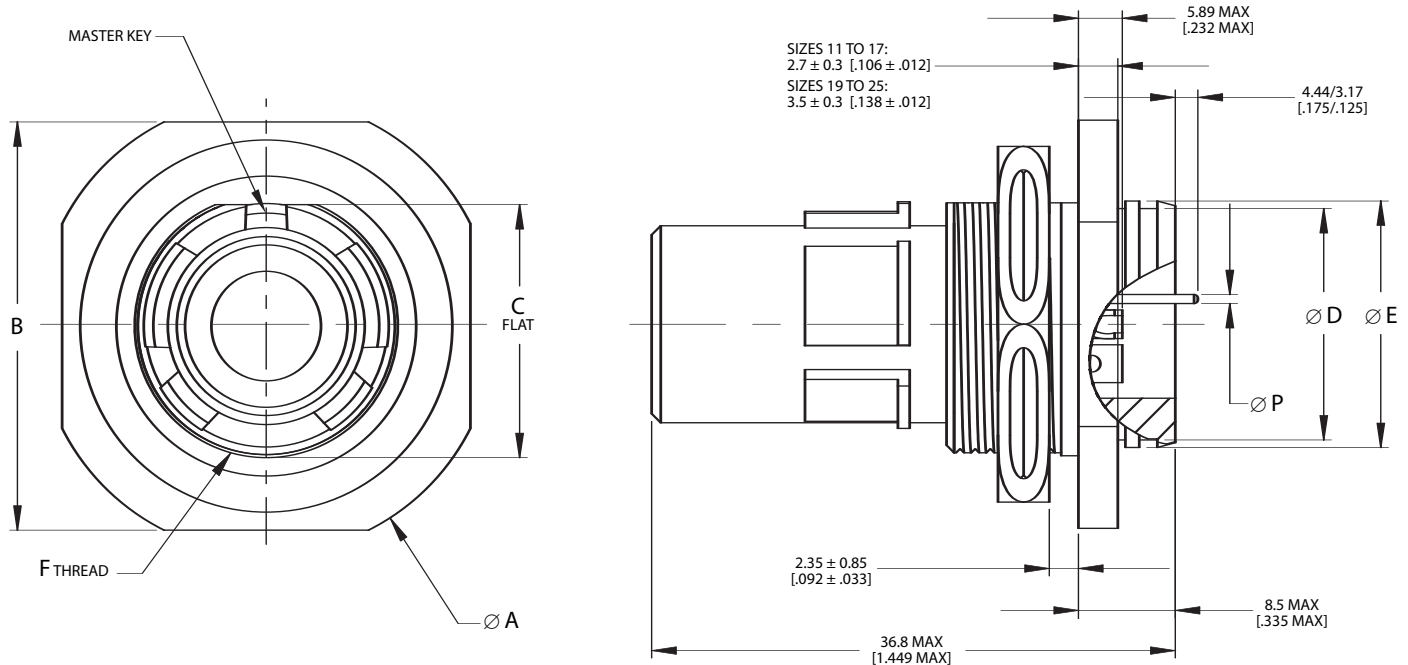


Shell Size	Shell Size Code	A		B		Ø C		Ø D		Ø E	
		±0.55	±.022	(TP)		±0.19	±.007	±0.20	±.008	Maximum	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
11	B	26.15	1.030	20.62	.812	19.96	.786	3.30	.130	15.88	.625
13	C	28.55	1.124	23.01	.906	23.16	.912	3.30	.130	19.05	.750
15	D	30.95	1.219	24.61	.969	26.33	1.037	3.30	.130	23.01	.906
17	E	33.35	1.313	26.97	1.062	29.53	1.163	3.30	.130	25.81	1.016
19	F	36.55	1.439	29.36	1.156	32.68	1.287	3.30	.130	28.98	1.141
21	G	39.65	1.561	31.75	1.250	35.86	1.412	3.30	.130	32.16	1.266
23	H	42.85	1.687	34.92	1.375	39.03	1.536	3.80	.150	34.93	1.375
25	J	46.05	1.813	38.10	1.500	42.21	1.662	3.80	.150	37.69	1.484

AE443
Jam Nut Receptacle
D38999/43



MIL-DTL-38999 S IV

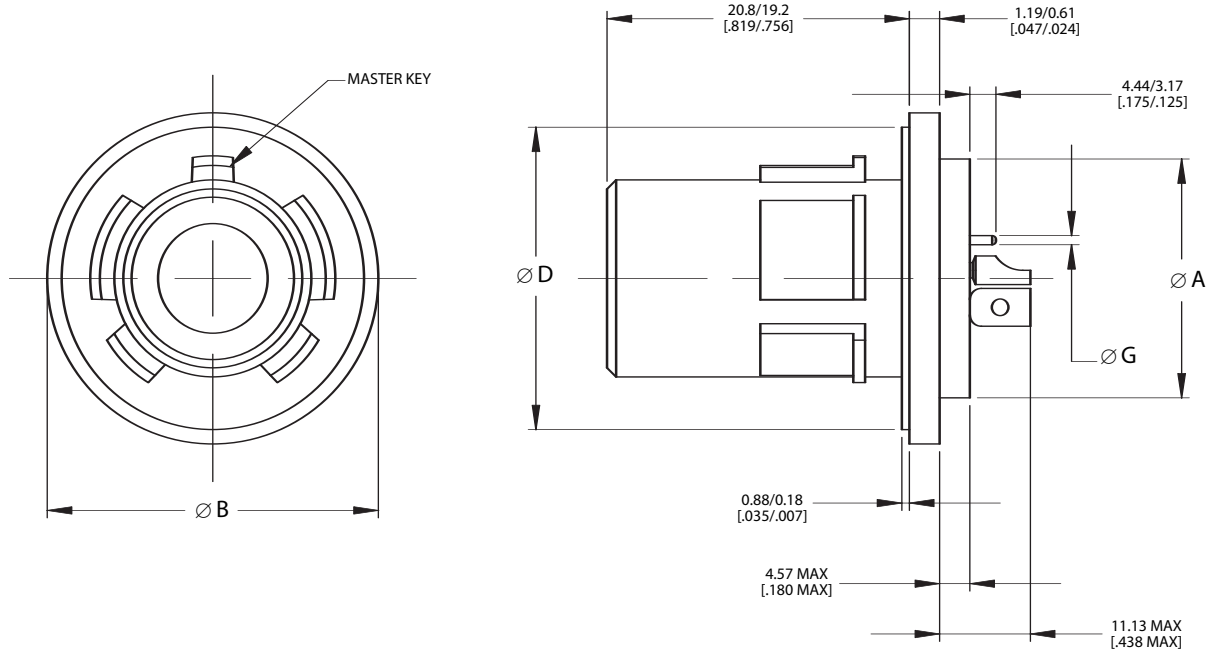


Contact Size	Ø P	
	mm	inch
22D	0.28	.011
	0.38	.015
20	0.60	.024
	0.70	.028
16	1.56	.061
	1.61	.063
12	2.36	.093
	2.41	.095



Note: Jam nut connectors are delivered with hex nut D38999/28 and O-ring seal.

Shell Size	Shell Size Code	Ø A		B		C		Ø D		Ø E		F
		Flat										
		±0.30	±.012	±0.45	±.018	±0.13	±.005	±0.20	±.008	±0.25	±.010	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
11	B	34.90	1.374	31.75	1.250	19.05	.750	18.40	.724	19.55	.770	M20x1-6g 0.100R
13	C	38.10	1.500	34.95	1.376	23.80	.937	21.55	.848	22.85	.900	M25x1-6g 0.100R
15	D	41.30	1.626	38.15	1.502	26.95	1.061	24.80	.976	26.05	1.026	M28x1-6g 0.100R
17	E	44.50	1.752	41.25	1.624	30.13	1.186	27.95	1.100	29.15	1.148	M32x1-6g 0.100R
19	F	49.20	1.937	46.05	1.813	33.31	1.311	31.20	1.228	32.35	1.274	M35x1-6g 0.100R
21	G	52.40	2.063	49.25	1.939	36.49	1.437	34.30	1.350	35.55	1.400	M38x1-6g 0.100R
23	H	55.60	2.189	52.35	2.061	39.64	1.561	37.50	1.476	38.75	1.526	M41x1-6g 0.100R
25	J	58.70	2.311	55.55	2.187	42.85	1.687	40.70	1.602	41.85	1.648	M44x1-6g 0.100R



MIL-DTL-38999 S IV

Contact Size	Ø G	
	mm	inch
22D	0.28	.011
	0.38	.015
20	0.60	.024
	0.70	.028
16	1.56	.061
	1.61	.063
12	2.36	.093
	2.41	.095

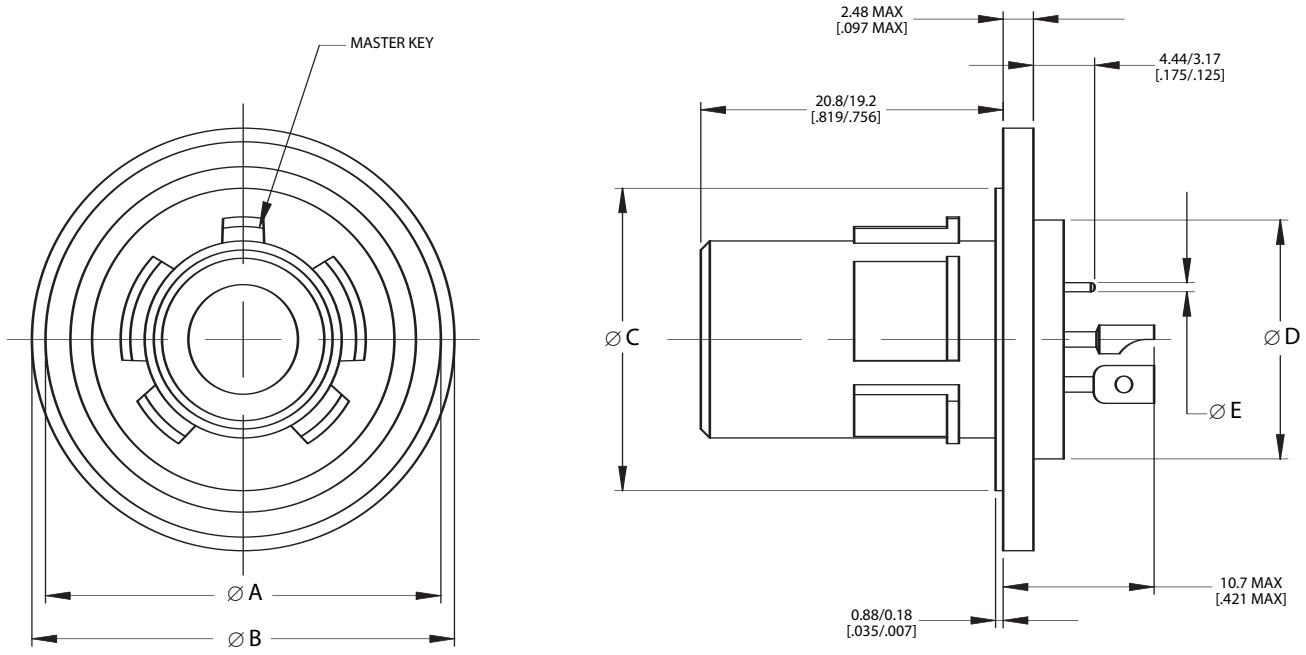


Shell Size	Shell Size Code	Ø A		Ø B		Ø D	
		Maximum		Maximum		±0.19	±.007
		mm	inch	mm	inch	mm	inch
11	B	19.90	.783	21.90	.862	19.96	.786
13	C	23.10	.909	25.10	.988	23.16	.912
15	D	26.30	1.035	28.20	1.110	26.33	1.037
17	E	29.40	1.157	31.40	1.236	29.53	1.163
19	F	31.80	1.252	33.80	1.331	32.68	1.287
21	G	35.00	1.378	37.00	1.457	35.86	1.412
23	H	38.20	1.504	40.20	1.583	39.03	1.537
25	J	41.40	1.630	43.30	1.705	42.21	1.662

AE448
Weld Mount Receptacle
D38999/48



MIL-DTL-38999 S IV



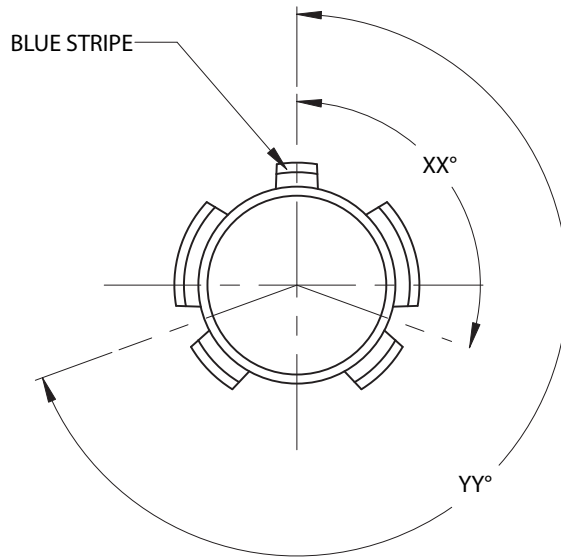
Contact Size	Ø E	
	mm	inch
22D	0.28	.011
	0.38	.015
20	0.60	.024
	0.70	.028
16	1.56	.061
	1.61	.063
12	2.36	.093
	2.41	.095



Shell Size	Shell Size Code	Ø A		Ø B		Ø C		Ø D	
		±0.15	±.006	±0.15	±.006	±0.19	±.007	Maximum	
		mm	inch	mm	inch	mm	inch	mm	inch
11	B	26.15	1.030	27.95	1.100	19.96	.786	15.88	.625
13	C	29.35	1.156	31.15	1.226	23.16	.912	19.05	.750
15	D	32.55	1.281	34.35	1.352	26.33	1.037	23.01	.906
17	E	34.75	1.368	36.55	1.439	29.53	1.163	25.81	1.016
19	F	38.45	1.514	40.25	1.585	32.68	1.287	28.98	1.141
21	G	42.05	1.656	43.85	1.726	35.86	1.412	32.16	1.266
23	H	46.25	1.821	48.05	1.892	39.03	1.537	34.93	1.375
25	J	48.45	1.907	50.25	1.978	42.21	1.662	37.69	1.484



Keying Positions



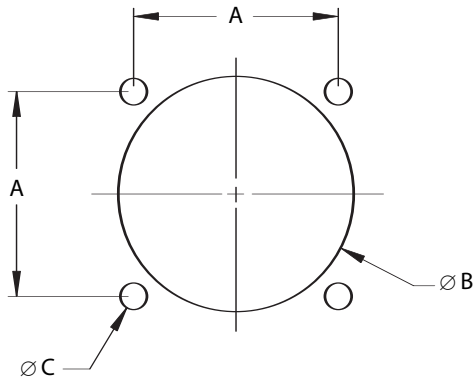
Key/Keyway	XX°	YY°
N	110	250
A	100	260
B	90	270
C	80	280
D	70	290
K	120	255

AE4 Series
Hermetic Connectors
 per MIL-DTL-38999 Series IV

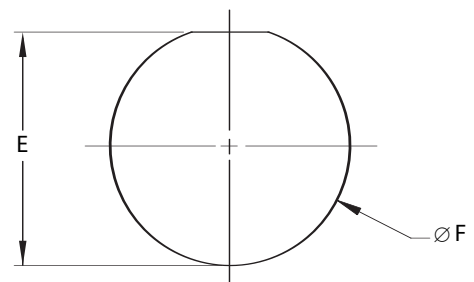


Panel Cutouts

AE441
 Wall Mount Receptacle



AE443
 Jam Nut Receptacle



MIL-DTL-38999 S IV

Shell Size	Shell Size Code	A		Ø B		Ø B		Ø C		E		Ø F	
		(TP)		Minimum Back Mounting		Minimum Front Mounting		±0.13	±.005	0.00	.000	+0.25	+0.10
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
11	B	20.62	.812	20.22	.796	15.88	.625	3.25	.128	19.59	.771	20.96	.825
13	C	23.01	.906	23.42	.922	19.05	.750	3.25	.128	24.26	.955	25.65	1.010
15	D	24.61	.969	26.59	1.047	23.01	.906	3.25	.128	27.56	1.085	28.83	1.135
17	E	26.97	1.062	30.96	1.219	25.81	1.016	3.25	.128	30.73	1.210	32.01	1.260
19	F	29.36	1.156	32.94	1.297	28.98	1.141	3.25	.128	33.91	1.335	35.18	1.385
21	G	31.75	1.250	36.12	1.422	32.16	1.266	3.25	.128	37.08	1.460	38.35	1.510
23	H	34.93	1.375	39.29	1.547	34.93	1.375	3.91	.154	40.26	1.585	41.53	1.635
25	J	38.10	1.500	42.47	1.672	37.69	1.484	3.91	.154	43.43	1.710	44.70	1.760

Insert Arrangement and Contact Information

Insert Arrangement				Service	Total	Quantity of Contacts				
					No. of	by Size				
Series I	Series II	Series III	Series IV	Rating	Contacts	22D	20	16	12	8
9-35	8-35	A-35	—	M	6	6				
9-98	8-98	A-98	—	I	3		3			
11-2	—	B-2	B-2	I	2			2		
11-4	—	B-4	B-4	I	4		4			
11-5	10-5	B-5	B-5	I	5		5			
11-35	10-35	B-35	B-35	M	13	13				
11-98	10-98	B-98	B-98	I	6		6			
11-99	10-99	B-99	B-99	I	7		7			
13-4	12-4	C-4	C-4	I	4			4		
13-8	12-8	C-8	C-8	I	8		8			
13-35	12-35	C-35	C-35	M	22	22				
13-98	12-98	C-98	C-98	I	10		10			
15-5	14-5	D-5	D-5	II	5			5		
15-15	14-15	D-15	D-15	I	15		14	1		
15-18	14-18	D-18	D-18	I	18		18			
15-19	—	D-19	D-19	I	19		19			
15-35	14-35	D-35	D-35	M	37	37				
15-97	14-97	D-97	D-97	I	12		8	4		
17-6	16-6	E-6	E-6	I	6				6	
17-8	16-8	E-8	E-8	II	8			8		
17-26	16-26	E-26	E-26	I	26		26			
17-35	16-35	E-35	E-35	M	55	55				
17-99	16-99	E-99	E-99	I	23		21	2		

AE1, AE2, AE3, and AE4 Series
Insert Arrangement and Contact Information
per MIL-STD-1560



Insert Arrangement and Contact Information

Insert Arrangement				Service	Total	Quantity of Contacts				
					No. of	by Size				
Series I	Series II	Series III	Series IV	Rating	Contacts	22D	20	16	12	8
19-11	18-11	F-11	F-11	II	11			11		
19-28	18-28	F-28	F-28	I	28		26	2		
19-30	18-30	F-30	F-30	I	30		29	1		
19-32	18-32	F-32	F-32	I	32		32			
19-35	18-35	F-35	F-35	M	66	66				
21-11	—	G-11	G-11	I	11				11	
21-16	20-16	G-16	G-16	II	16			16		
21-35	20-35	G-35	G-35	M	79	79				
21-39	20-39	G-39	G-39	I	39		37	2		
21-41	20-41	G-41	G-41	I	41		41			
21-48 *	—	G-48 *	G-48 *	I	4					4
23-21	22-21	H-21	H-21	II	21			21		
23-32	22-32	H-32	H-32	I	32		32			
23-35	22-35	H-35	H-35	M	100	100				
23-53	22-53	H-53	H-53	I	53		53			
23-55	22-55	H-55	H-55	I	55		55			
25-4	24-4	J-4	J-4	I	56		48	8		
25-19	24-19	J-19	J-19	I	19				19	
25-24	24-24	J-24	J-24	I	24			12	12	
25-29	24-29	J-29	J-29	I	29			29		
25-35	24-35	J-35	J-35	M	128	128				
25-43	—	J-43	J-43	I	43		23	20		
25-61	24-61	J-61	J-61	I	61		61			

* Not MIL-STD-1560 layout



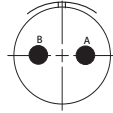
Insert Arrangement Views



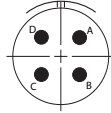
9-35/8-35
A35,
6 # 22D, M



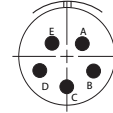
9-98/8-98
A98,
3 # 20, I



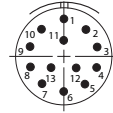
11-2
B2,
2 # 16, I



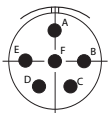
11-4
B4,
4 # 20, I



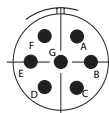
11-5/10-5
B5,
5 # 20, I



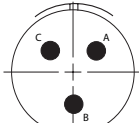
11-35/10-35
B35,
13 # 22D, M



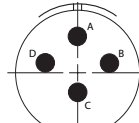
11-98/10-98
B98,
6 # 20, I



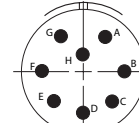
11-99/10-99
B99,
7 # 20, I



12-3
3 # 16, II



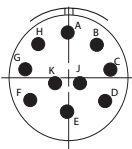
13-4/12-4
C4,
4 # 16, I



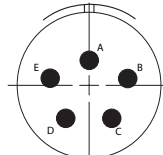
13-8/12-8
C8,
8 # 20, I



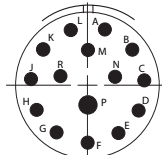
13-35/12-35
C35,
22 # 22D, M



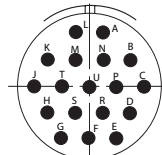
13-98/12-98
C98,
10 # 20, I



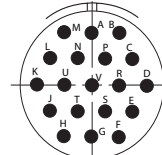
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D5,
5 # 16, II



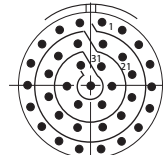
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D15,
1 # 16, 14 # 20, I



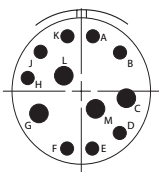
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D18,
18 # 20, I



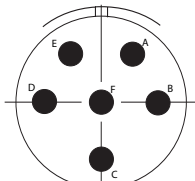
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D19,
19 # 20, I



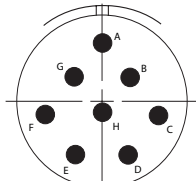
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D35,
37 # 22D, M



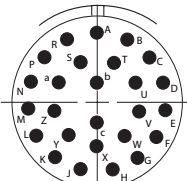
15-97/14-97
D97,
4 # 16, 8 # 20, I



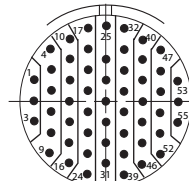
17-6/16-6
E6,
6 # 12, I



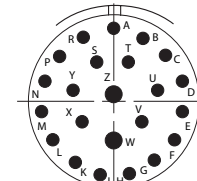
17-8/16-8
E8,
8 # 16, II



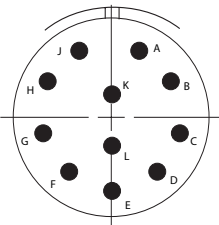
17-26/16-26
E26,
26 # 20, I



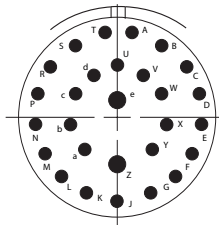
17-35/16-35
E35,
55 # 22D, M



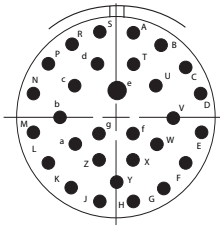
17-99/16-99
E99,
2 # 16, 21 # 20, I



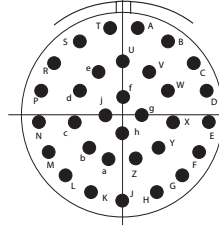
19-11/18-11
F11,
11 # 16, II



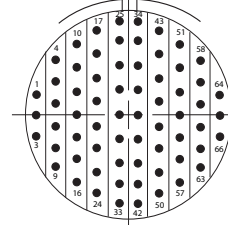
19-28/18-28
F28,
2 # 16, 26 # 20, I



19-30/18-30
F30,
1 # 16, 29 # 20, I



19-32/18-32
F32,
32 # 20, I

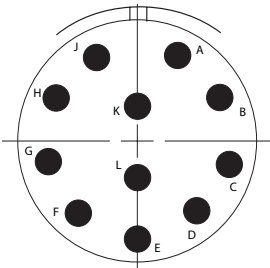


19-35/18-35
F35,
66 # 22D, M

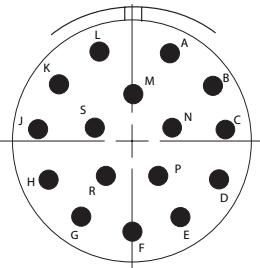
AE1, AE2, AE3, and AE4 Series
Insert Arrangement (Pin Front View)
 per MIL-STD-1560



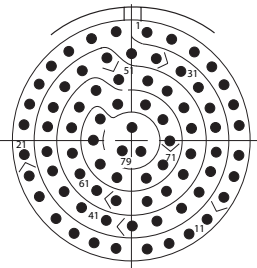
Insert Arrangement Views



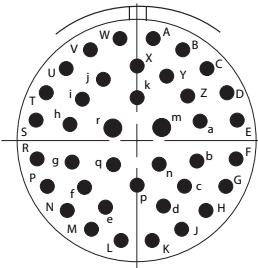
21-11
G11,
11 # 12, I



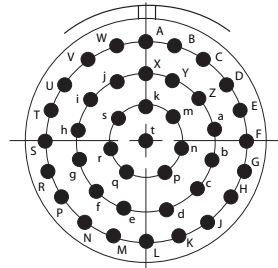
21-16/20-16
G16,
16 # 16, II



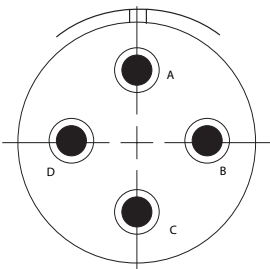
21-35/20-35
G35,
79 # 22D, M



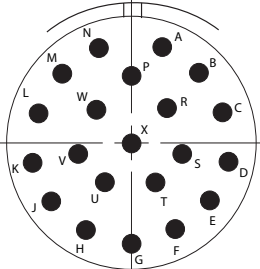
21-39/20-39
G39,
2 # 16, 37 # 20, I



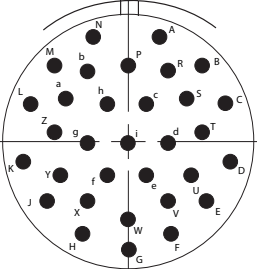
21-41/20-41
G41,
41 # 20, I



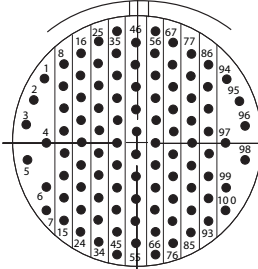
21-48*
G48*,
4 # 8 Power, I



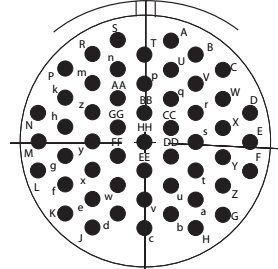
23-21/22-21
H21,
21 # 16, II



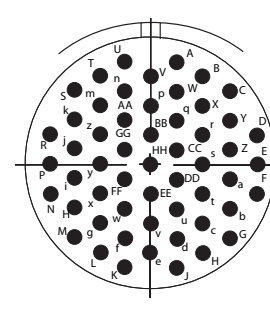
23-32/22-32
H32,
32 # 20, I



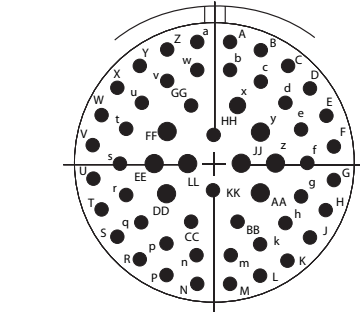
23-35/22-35
H35,
100 # 22D, M



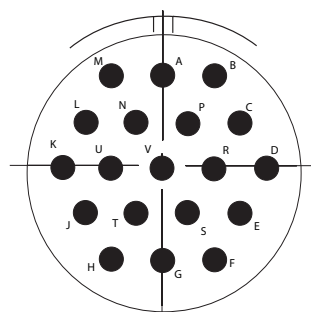
23-53/22-53
H53,
53 # 20, I



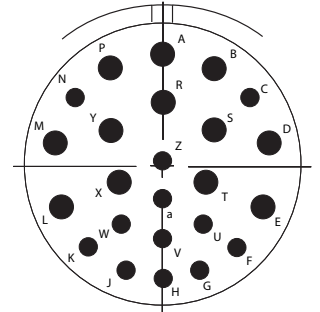
23-55/22-55
H55,
55 # 20, I



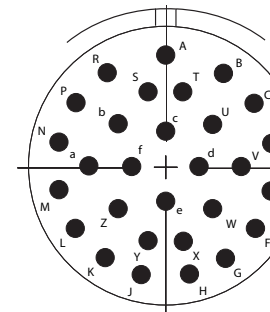
25-4/24-4
J4,
8 # 16, 48 # 20, I



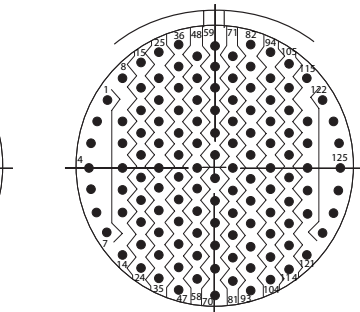
25-19/24-19
J19,
19 # 12, I



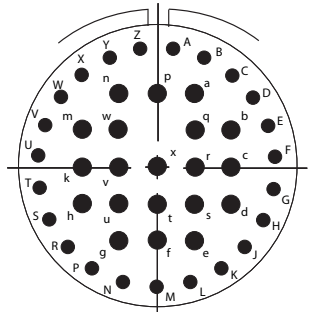
25-24/24-24
J24,
12 # 12, 12 # 16, I



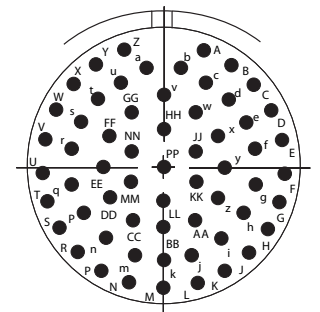
25-29/24-29
J29,
29 # 16, I



25-35/24-35
J35,
128 # 22D, M



25-43
J43,
20 # 16, 23 # 20, I



25-61/24-61
J61,
61 # 20, I

* Not MIL-STD-1560 layout