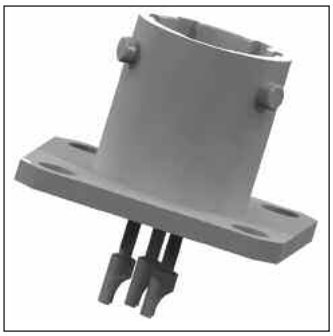
Conesys Europe
Hermetic Connectors

AE7 Series
per MIL-DTL-26482 Series 2

AE77 Series
per EN3646, HE302, and NAS1599



Features and Application

AE7 Series and AE77 Series hermetic connector receptacles are manufactured to Conesys Europe standards. AE7 Series meets all the requirements of MIL-DTL-26482. AE77 Series hermetic connectors are based on HE302, EN3646, and NAS1599 specification. They are fully intermateable with AE7 series connectors.

AE7 and AE77 Series connectors are widely used on commercial, military and aerospace systems requiring general purpose, miniature cylindrical bayonet coupling connectors.

This family of hermetic connectors is available in 5 receptacle styles. They include:
- narrow flange, wall mounting
- narrow short flange, wall mounting
- wide flange, wall mounting
- jam nut mounting
- solder mounting

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

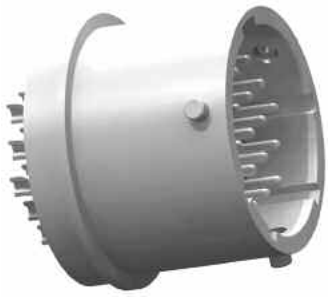
Insert Arrangement – AE7 and AE77 Series hermetic connectors use MIL-STD 1669 and EN3646 insert arrangements. Contacts are available in size 20, 16, and 12.

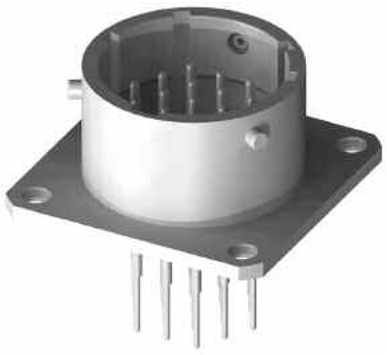
Insert Polarization – Alternate insert clocking positions prevent cross mating of adjacent connectors having the same insert arrangement.

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.

Special Contacts – These hermetic connectors are available with special contact, i.e., thermo couple (chromel, alumel, etc.). Commercial P/N only.





Performance Specifications

Operating Temperature Range
AE7 Series: -55°C to +200°C (-67°F to +392°F)
AE77 Series:
Class H: -55°C to +200°C (-67°F to +392°F)
Class Y: -55°C to +200°C (-67°F to +392°F)

Material and Finish Data (Class)
Class H:

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

Class Y:

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

Corrosion Resistance
In accordance with MIL-STD-1344 Method 1001 per MIL DTL 26482 (for standard plating).

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shock and Vibration
In accordance with MIL-STD-202, Method 204, Condition B.

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

Withstanding Voltage
Service Rating I:

At sea level:	1500 V rms
At 15 000 m altitude:	600 V rms
At 21 000 m altitude:	400 V rms
At 33 000 m altitude:	200 V rms

Service Rating II:

At sea level:	2300 V rms
At 15 000 m altitude:	750 V rms
At 21 000 m altitude:	500 V rms
At 33 000 m altitude:	200 V rms

Maximum Current Rating per Contact

Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp

Military and Conesys Part Number Development

Mil. Prefix	MS34	40	H	10	B	06	P	W	
Conesys Prefix	AE7	40	H	10	B	06	P	W	-XXX

Shell Type (specification sheet number)
- **40** = Wall mount receptacle – narrow
- **43** = Solder mount receptacle
- **49** = Jam nut receptacle

Class (Material and Finish)
- **H** = Hermetic – see contact style

Shell Size
- **8 thru 24**

Contact Style (pin only)
- **A** = Pin with solder cup, gold plated
  = Shell – stainless steel, passivated
- **B** = Pin with eyelet, gold plated
  = Shell – stainless steel, passivated
- **C** = Pin with solder cup, tin plated
  = Shell – mild steel, tin plated
- **Y** = Pin with eyelet, tin plated
  = Shell – mild steel, tin plated

Insert Arrangement
- See pages 100–102

Contact Style (pin only)

Polarization (keying)
- **N** = Normal (omitted in part number)
- **W, X, Y,** or **Z** Alternate insert polarizations (see pages 100–101 for position availability)

Modification or Particularities (applies to Conesys part numbers only)
- **XXX** = Modification
- Consult factory for details

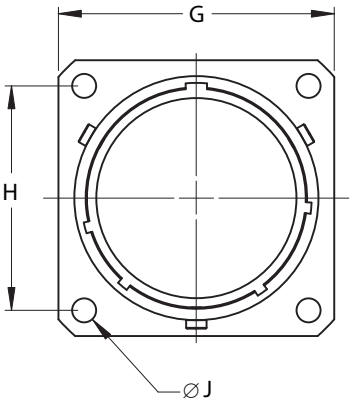
Terminal Configuration

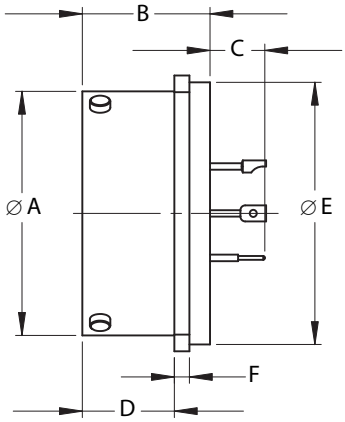
Terminal Styles A and C
Solder cup
Available in sizes 20, 16, and 12
For other sizes, please consult factory.

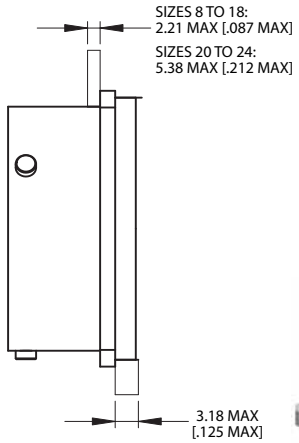
Terminal Styles B and Y
Eyelet
Available in sizes 20 and 16
For other sizes, please consult factory.

Pin tail for PCB
Available in sizes 22, 20, and 16
P/N with modification code only; please consult factory.

AE740
Wall Mount Receptacle – Narrow
MS3440

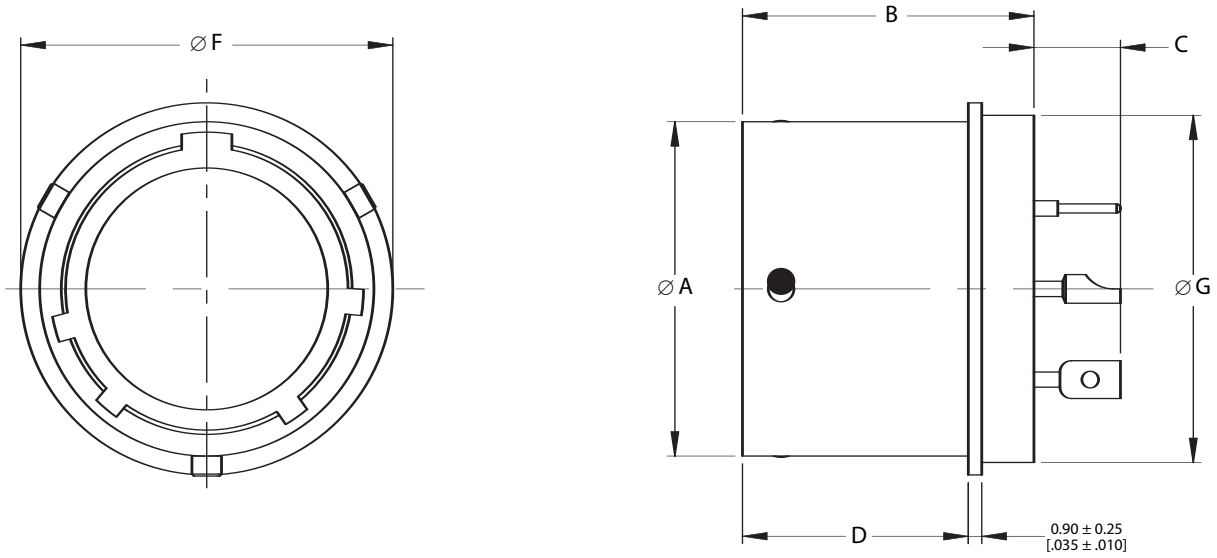






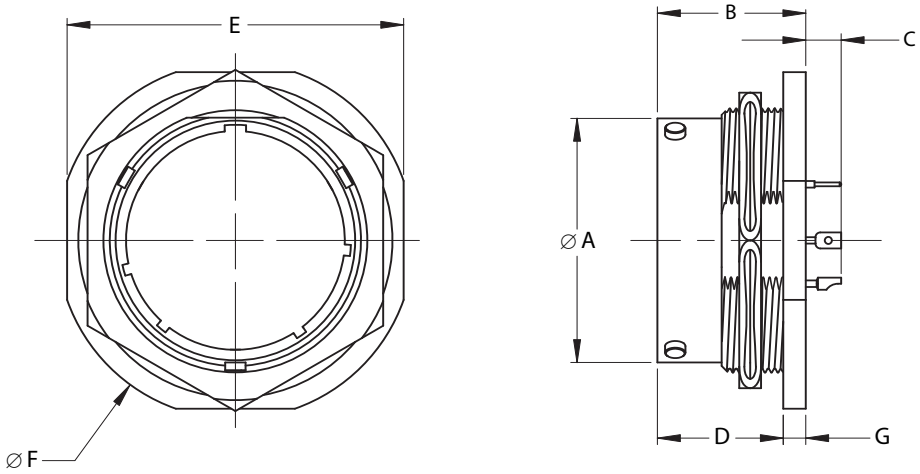
Shell Size	C #20		C #16 and #12	
	±0.76	±.030	±0.76	±.030
	mm	inch	mm	inch
8 to 20	3.76	.148	5.54	.218
22 and 24	2.95	.116	4.72	.186

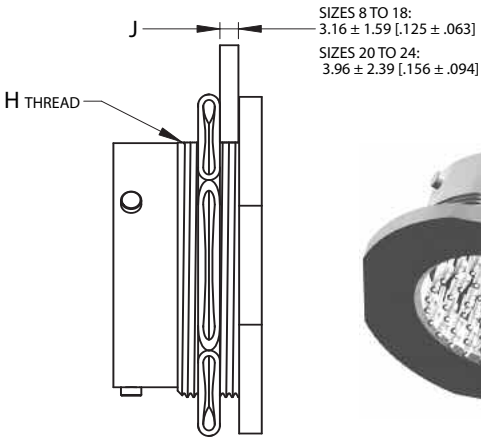
Shell Size	∅A		B		D		∅E		F		G		H		∅J		L	
	Maximum		Maximum		±0.25	±.010	±0.08	±.003	±0.41	±.016	Maximum		(TP)		±0.13	±.005	Maximum	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	12.04	.474	20.35	.801	14.94	.588	14.22	.560	1.57	.062	21.03	.828	15.09	.594	3.05	.120	2.21	.087
10	15.02	.591	20.35	.801	14.94	.588	17.02	.670	1.57	.062	24.23	.954	18.26	.719	3.05	.120	2.21	.087
12	19.08	.751	20.35	.801	14.94	.588	19.79	.779	1.57	.062	26.59	1.047	20.62	.812	3.05	.120	2.21	.087
14	22.25	.876	20.35	.801	14.94	.588	22.96	.904	1.57	.062	28.98	1.141	23.01	.906	3.05	.120	2.21	.087
16	25.33	.997	20.35	.801	14.94	.588	26.14	1.029	1.57	.062	31.34	1.234	24.61	.969	3.05	.120	2.21	.087
18	28.60	1.126	20.35	.801	14.94	.588	29.31	1.154	1.57	.062	33.73	1.328	26.97	1.062	3.05	.120	2.21	.087
20	31.78	1.251	21.92	.863	16.51	.650	31.70	1.248	2.39	.094	36.91	1.453	29.36	1.156	3.05	.120	5.38	.212
22	34.95	1.376	22.73	.895	16.51	.650	34.87	1.373	2.39	.094	40.08	1.578	31.75	1.250	3.05	.120	5.38	.212
24	38.13	1.501	22.73	.895	16.51	.650	38.05	1.498	2.39	.094	43.26	1.703	34.92	1.375	3.73	.147	5.38	.212



Shell Size	∅A Maximum mm	∅A Maximum inch	∅B Maximum mm	∅B Maximum inch	C #20 ±0.76 mm	C #20 ±.030 inch	C #16 and #12 ±0.76 mm	C #16 and #12 ±.030 inch	D ±0.25 mm	D ±.010 inch	∅F ±0.25 mm	∅F ±.010 inch	∅G ±0.08 mm	∅G ±.003 inch
8	12.04	.474	20.35	.801	3.76	.148	5.54	.218	14.94	.588	15.87	.625	14.22	.560
10	15.02	.591	20.35	.801	3.76	.148	5.54	.218	14.94	.588	19.05	.750	17.02	.670
12	19.08	.751	20.35	.801	3.76	.148	5.54	.218	14.94	.588	21.44	.844	19.79	.779
14	22.25	.876	20.35	.801	3.76	.148	5.54	.218	14.94	.588	24.61	.969	22.96	.904
16	25.33	.997	20.35	.801	3.76	.148	5.54	.218	14.94	.588	27.79	1.094	26.14	1.029
18	28.60	1.126	20.35	.801	3.76	.148	5.54	.218	14.94	.588	30.94	1.218	29.31	1.154
20	31.78	1.251	21.92	.863	3.76	.148	5.54	.218	16.51	.650	33.32	1.312	31.70	1.248
22	34.95	1.376	22.73	.895	2.95	.116	4.72	.186	16.51	.650	36.53	1.438	34.87	1.373
24	38.13	1.501	22.73	.895	2.95	.116	4.72	.186	16.51	.650	39.73	1.564	38.05	1.498

MS3449
Jam Nut Receptacle
AE749





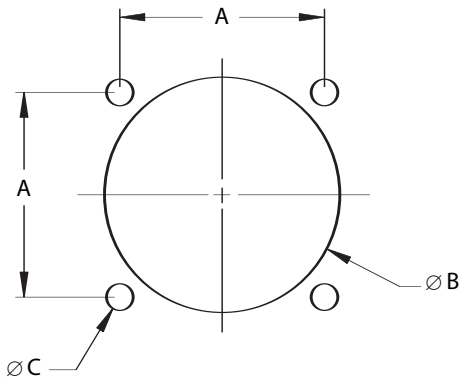
Shell Size	C #20 ±0.76 mm	C #20 ±.030 inch	C #16 and #12 ±0.76 mm	C #16 and #12 ±.030 inch
8 to 18	2.64*	.104*	4.42*	.174*
20 and 22	1.75*	.069*	3.53*	.139*
24	0.95*	.038*	2.77*	.109*

* Not Applicable for pin tail – Please consult factory

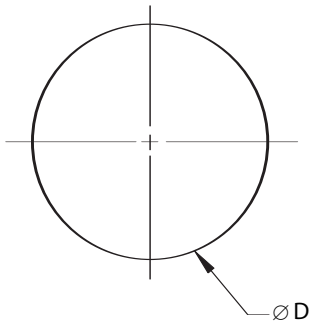
Shell Size	⌀A Maximum mm	⌀A Maximum inch	B Maximum mm	B Maximum inch	D ±0.20 mm	D ±.008 inch	E ±0.39 mm	E ±.016 inch	⌀F ±0.39 mm	⌀F ±.016 inch	G ±0.20 mm	G ±.008 inch	H Thread Class 2A	J ±1.59 mm	J ±.063 inch
8	12.04	.474	20.83	.820	17.75	.699	23.84	.939	26.99	1.063	2.67	.105	.5625-24 UNEF	3.16	.125
10	15.02	.591	20.83	.820	17.75	.699	26.99	1.063	30.16	1.188	2.67	.105	.6875-24 UNEF	3.16	.125
12	19.08	.751	20.83	.820	17.75	.699	31.76	1.251	34.94	1.376	2.67	.105	.8750-20 UNEF	3.16	.125
14	22.25	.876	20.83	.820	17.75	.699	34.94	1.376	38.11	1.501	2.67	.105	1.000-20 UNEF	3.16	.125
16	25.33	.997	20.83	.820	17.75	.699	38.11	1.501	41.29	1.626	2.67	.105	1.125-18 UNEF	3.16	.125
18	28.60	1.126	20.83	.820	17.75	.699	41.29	1.626	44.46	1.751	2.67	.105	1.250-18 UNEF	3.16	.125
20	31.78	1.251	23.37	.920	19.38	.763	46.04	1.813	49.24	1.939	3.51	.138	1.375-18 UNEF	3.96 ≠	.156 ≠
22	34.95	1.376	23.37	.920	19.38	.763	49.24	1.939	52.39	2.063	3.51	.138	1.500-18 UNEF	3.96 ≠	.156 ≠
24	38.13	1.501	24.16	.951	19.15	.754	52.39	2.063	55.56	2.188	3.51	.138	1.625-18 UNEF	3.96 ≠	.156 ≠

Panel Cutouts

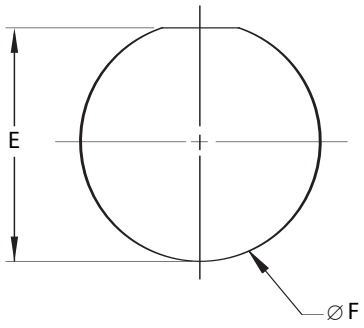
AE740
Wall Mount Receptacle



AE743
Solder Mount Receptacle



AE749
Jam Nut Receptacle

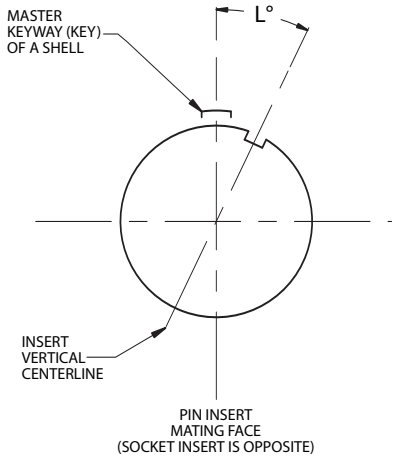


Shell Size	A (TP) mm	A (TP) inch	⌀B Minimum mm	⌀B Minimum inch	⌀C ±0.25 mm	⌀C ±.010 inch	⌀D ±0.13 mm	⌀D ±.005 inch	E ±0.13 mm	E ±.005 inch	⌀F ±0.13 mm	⌀F ±.005 inch
8	15.09	.594	14.43	.568	3.05	.120	14.48	.570	13.61	.536	14.53	.572
10	18.26	.719	17.40	.685	3.05	.120	17.27	.680	16.79	.661	17.70	.697
12	20.62	.812	21.95	.864	3.05	.120	20.04	.789	20.93	.824	22.73	.895
14	23.01	.906	25.12	.989	3.05	.120	23.22	.914	24.08	.948	25.65	1.010
16	24.61	.969	28.27	1.113	3.05	.120	26.39	1.039	27.23	1.072	28.83	1.135
18	26.97	1.062	31.45	1.238	3.05	.120	29.57	1.164	30.40	1.197	32.00	1.260
20	29.36	1.156	34.62	1.363	3.05	.120	31.95	1.258	33.58	1.322	35.18	1.385
22	31.75	1.250	37.80	1.488	3.05	.120	35.13	1.383	36.75	1.447	38.35	1.510
24	34.92	1.375	41.02	1.615	3.73	.147	38.30	1.508	39.93	1.572	41.53	1.635

Insert Arrangement/Positions

Notes:

- In the normal insert clocking position (position N), the insert centerline coincides with the centerline of the master keyway (key) of the shell: L = 0°.
- In the alternate clocking positions (W, X, Y and Z), the pin insert (viewing from mating side) is rotated clockwise relative to the centerline of the master keyway (key) of the shell.
- Be careful with alternate positions. See table below for position availability on layouts of interest.



Insert Arrangement	Total No. of Contacts	Quantity of Contacts			Alternate Positions				
		By Size			Insert Rotation in Degrees				
		20	16	12	N	W	X	Y	Z
8-2	2	2			0	58	122	—	—
8-3	3	3			0	60	210	—	—
8-4	4	4			0	45	—	—	—
8-33	3	3			0	90	—	—	—
8-3A / 8-98	3	3			0	—	—	—	—
10-6	6	6			0	90	—	—	—
10-7*	7	7			0	90	—	—	—
10-98	6	6			0	—	—	—	—
12-3	3		3		0	—	—	180	—
12-8	8	8			0	90	112	203	273
12-10	10	10			0	60	155	270	295
14-2*	2			2	0	—	—	—	—
14-4	4			4	0	45	—	—	—
14-5	5		5		0	40	92	184	273
14-9	9	5		4	0	15	90	180	240
14-12	12	8	4		0	43	90	—	—
14-15	15	14	1		0	17	110	155	234
14-18	18	18			0	15	90	180	270
14-19	19	19			0	30	165	315	—
16-8	8		8		0	54	152	180	331
16-14	11	5		6	0	25	78	180	240
16-21	21	16	5		0	—	—	—	—
16-23	23	22	1		0	158	270	—	—
16-26	26	26			0	60	—	275	338

* Non MIL-STD-1669 layout

Insert Arrangement/Positions

Insert Arrangement	Total No. of Contacts	Quantity of Contacts			Alternate Positions				
		By Size			Insert Rotation in Degrees				
		20	16	12	N	W	X	Y	Z
18-8	8			8	0	180	—	—	—
18-11	11		11		0	62	119	241	340
18-30	30	29	1		0	180	193	285	350
18-32	20	20			0	85	138	222	265
20-16	16		16		0	238	318	333	347
20-24	24	24			0	70	145	215	290
20-39	39	37	2		0	63	144	252	333
20-41	41	41			0	45	126	225	—
22-12	12			12	0	—	—	—	—
22-21	21		21		0	16	135	175	349
22-41	41	27	14		0	39	135	264	—
22-55	55	55			0	30	142	226	314
22-95	32	26		6	0	26	180	266	—
24-19	19			19	0	30	165	315	—
24-31	31		31		0	90	225	255	—
24-61	61	61			0	90	180	270	324

Insert Arrangement (Pin Front View)

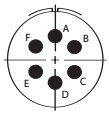

8-2
2 # 20, I

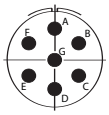

8-3
3 # 20, I

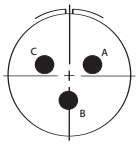

8-4
4 # 20, I

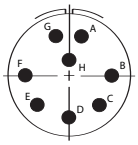

8-33
3 # 20, I

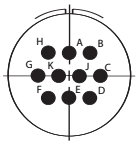

8-98
3 # 20, I

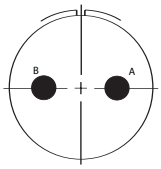

10-6
6 # 20, I

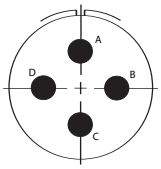

10-7*
7 # 20, I

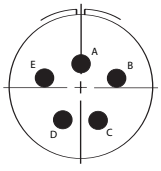

12-3
3 # 16, II

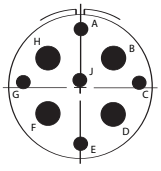

12-8
8 # 20, I

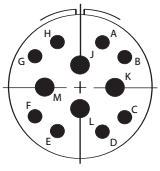

12-10
10 # 20, I


14-2*
2 # 12, I


14-4
4 # 12, I


14-5
5 # 16, II


14-9
5 # 20, 4 # 12, I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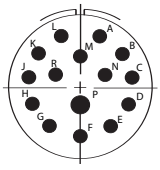
4 # 16, 8 # 20, I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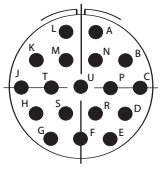
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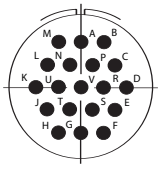
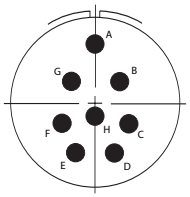
18 # 20, I

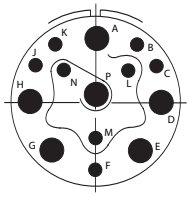

14-19
19 # 20, I

* Non MIL-STD-1669 layout

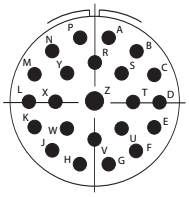
Insert Arrangement (Pin Front View)



16-8
8 # 16, II



16-14
8 # 20, 6 # 12, I



16-23
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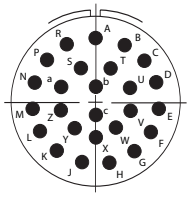
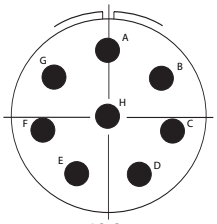
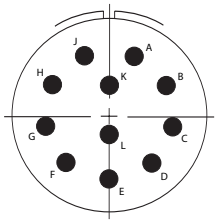


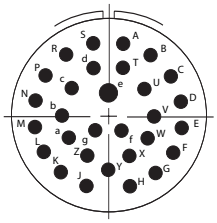
16-26
26 # 20, I



18-8
8 # 12, I



18-11
11 # 16, II



18-30
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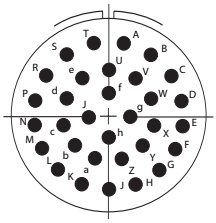
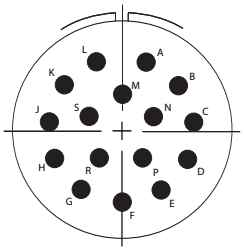


18-32
32 # 20, I



20-16
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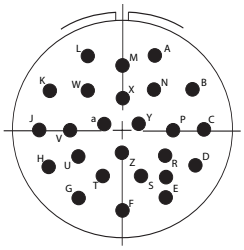
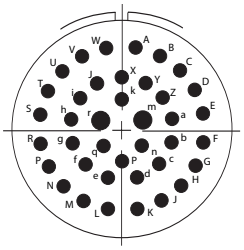


20-24
24 # 20, I



20-39
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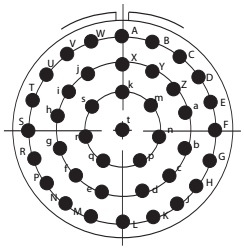
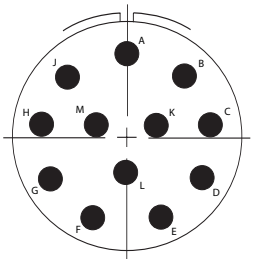


20-41
41 # 20, I



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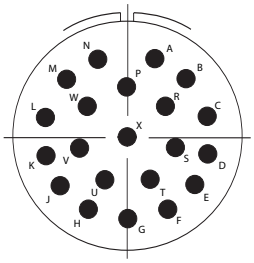

22-21
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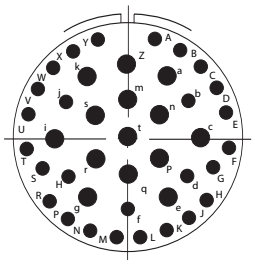

22-41
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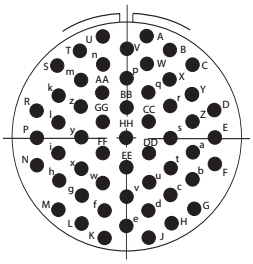
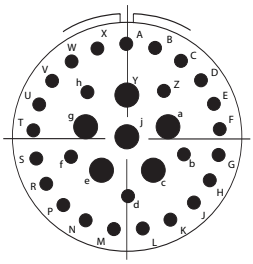
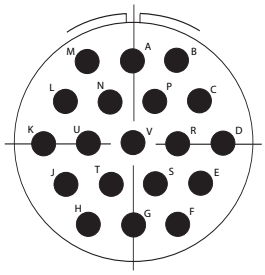


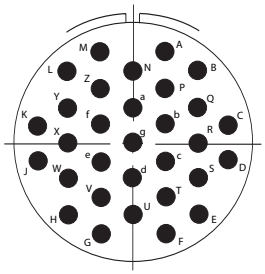
22-55
55 # 20, I



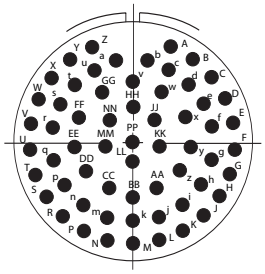
22-95
6 # 12, 26 # 20, I



24-19
19 # 12, II



24-31
31 # 16, I



24-61
61 # 20, I