Selecting Your Insert Arrangement

Below is a chart that represents every available shell size and contact arrangement within the series. To choose the proper insert arrangement, you must first distinguish your requirements for contact size and amount.

For each specific insert arragnement, the first number represents the connector shell size. The second number represents the contact configuration. However, the second number does not always equal the total number of contacts. ■

Insert Arrangement Selection

Insert Arrangement	Total Contacts	Contact Size					Service Rating
		#16	#12	#8	#4	#0	
12-5	1		1				A
14-53	6	6					Inst.
16-7	3	2		1			A
16-9	4	2	2				A
16-10	3		3				A
16-11	2		2				A
16-12	1				1		A
18-1	10	10					A/Inst.
18-3	2		2				D
18-4	4	4					D
18-5	3	1	2				D
18-8	8	7	1				A
18-9	7	5	2				Inst.
18-10	4		4				A
18-11	5		5				A
18-12	6	6					A
18-13	4		3	1			A
18-16	1		1				C
18-19	10	10					A
18-22	3	3					D
20-2	1					1	D
20-3	3		3				D
20-4	4		4				D
20-7	8	8					D/A
20-8	6	4		2			Inst.
20-11	13	13					Inst.
20-14	5		3	2			A
20-15	7		7				A
20-16	9	7	2				A
20-17	6	1	5				A
20-18	9	6	3				A
20-19	3			3			A
20-22	6	3		3			A

Insert Arrangement	Total Contacts	Contact Size					Service Rating
		#16	#12	#8	#4	#0	
20-23	2			2			A
20-24	4	2		2			A
20-27	14	14					A
20-29	17	17					A
20-33	11	11					A
22-1	2			2			D
22-2	3			3			D
22-5	6	4	2				D
22-6	3	1		2			D
22-7	1					1	E
22-8	2		2				E
22-9	3		3				E
22-11	2	2					B
22-12	5	3		2			D
22-13	5	1	4				D/A
22-14	19	19					A
22-15	6	1	5				E/A
22-18	8	8					D/A
22-19	14	14					A
22-20	9	9					A
22-21	3	2				1	A
22-22	4			4			A
22-23	8		8				D/A
22-28	7		7				A
22-33	7	7					D/A
24-2	7		7				D
24-5	16	16					A
24-6	8		8				D/A
24-7	16	14	2				A
24-9	2				2		A
24-10	7			7			A
24-11	9		6	3			A
24-12	5		3		2		A

(Continued on next page)

Insert Arrangement Selection (Continued from previous page)

Insert Arrangement	Total Contacts	Contact Size					Service Rating
		#16	#12	#8	#4	#0	
24-20	11	9	2				D
24-21	10	9		1			D
24-22	4			4			D
24-27	7	7					E
24-28	24	24					Inst.
28-1	9		6	3			D/A
28-2	14	12	2				D
28-3	3			3			E
28-5	5	2	1		2		D
28-6	3				3		D
28-7	2				2		D
28-8	12	10	2				E/D/A
28-9	12	6	6				D
28-10	7		3	2	2		D/A
28-11	22	18	4				A
28-12	26	26					A
28-15	35	35					A
28-16	20	20					A
28-17	15	15					B/D/A
28-18	12	12					C/D/A/Inst
28-19	10	6	4				B/D/A
28-20	14	4	10				A
28-21	37	37					A

Insert Arrangement	Total Contacts	Contact Size					Service Rating
		#16	#12	#8	#4	#0	
28-22	6	3			3		D
32-1	5		3			2	E/D
32-2	5	2			3		E
32-3	9	4	2		2	1	D
32-5	2					2	D
32-6	23	16	2	3	2		A
32-7	35	28	7				Inst./A
32-8	30	24	6				A
32-9	14	12			2		D
32-13	23	18	5				D
32-15	8		6			2	D
32-17	4				4		D
36-3	6		3			3	D
36-4	3					3	D/A
36-5	4					4	A
36-6	6				4	2	A
36-7	47	40	7				A
36-8	47	46	1				A
36-9	31	14	14	2	1		A
36-10	48	48					A
36-14	16	6	5	5			D
36-15	35	35					D/A
36-52	52	52					A

QS

HIGH-FREQUENCY CONTACTS FOR HIGH-SPEED TRANSMISSION

Wall mount with eight concentric twinax contacts for high-speed data transmission in a rugged connector.

Contacts for Advanced Applications

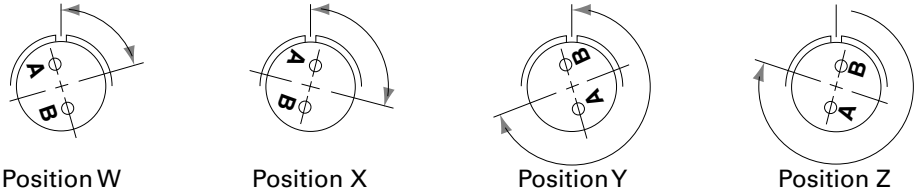
Milnec's high-frequency contacts are the ideal choice for advanced applications that require superior electrical performance along with shielding to protect from outside electrical interference.

- High-speed RF contacts
- Fiber optic contacts
- PC tail contacts

Protect Equipment With an Alternate Insert Arrangement

Alternate insert rotations are available in order to prevent crossmating of connectors, which could lead to system damage or user harm. This is particularly helpful when working with high-density connector panels that consist of multiple similar or identical connectors.

Rotations are designated at the time of ordering using rotation labels N (normal), W, X, Y, and Z. Some insert patterns have limited or no alternate rotation options. Refer to the table below for possible rotations in specific patterns. ■



Position W Position X Position Y Position Z

Looking into front face of pin insert or rear of socket insert.

Alternate Insert Rotations

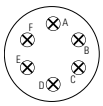
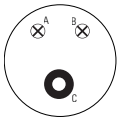
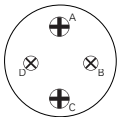
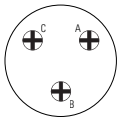
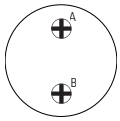
Insert Arrangement	Degrees			
	W	X	Y	Z
12-5				
14-53				
16-7	80	110	250	280
16-9	35	110	250	325
16-10	90	180	270	
16-11	35	110	250	325
16-12				
18-1	70	145	215	290
18-3	35	110	250	325
18-4	35	110	250	325
18-5	80	110	250	280
18-8	70			290
18-9	80	110	250	280
18-10		120	240	
18-11		170	265	
18-12	80			280
18-13	80	110	250	280
18-16				
18-19		120	240	
18-22	70	145	215	290
20-2				
20-3	70	145	215	290
20-4	45	110	250	
20-7	80	110	250	280
20-8	80	110	250	280
20-11				
20-14	80	110	250	280
20-15	80			280

Insert Arrangement	Degrees			
	W	X	Y	Z
20-16	80	110	250	280
20-17	90	180	270	
20-18	35	110	250	325
20-19	90	180	270	
20-22	80	110	250	280
20-23	35	110	250	325
20-24	35	110	250	325
20-27	35	110	250	325
20-29	80			280
20-33				
22-1	35	110	250	325
22-2	70	145	215	290
22-5	35	110	250	325
22-6	80	110	250	280
22-7				
22-8	35	110	215	325
22-9	70	145	250	290
22-11	35	110	250	325
22-12	80	110	250	280
22-13	35	110	250	325
22-14	80	110	250	280
22-15	80	110	250	280
22-18	80	110	250	280
22-19	80	110	250	280
22-20	35	110	250	325
22-21	80	110	250	280
22-22		110	250	
22-23	35		250	

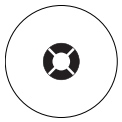
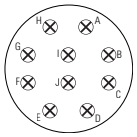
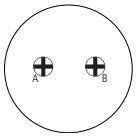
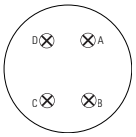
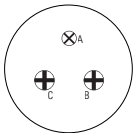
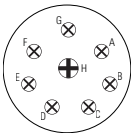
Insert Arrangement	Degrees			
	W	X	Y	Z
22-28	80			280
22-33	80	110	250	280
24-2	80			280
24-5	80	110	250	280
24-6	80	110	250	280
24-7	80	110	250	280
24-9	35	110	250	325
24-10	80			280
24-11	35	110	250	325
24-12	80	110	250	280
24-20	80	110	250	280
24-21	80	110	250	280
24-22	45	110	250	
24-27	80			280
24-28	80	110	250	280
28-1	80	110	250	280
28-2	35	110	250	325
28-3	70	145	215	290
28-5	35	110	250	325
28-6	70	145	215	290
28-7	35	110	250	325
28-8	80	110	250	280
28-9	80	110	250	280
28-10	80	110	250	280
28-11	80	110	250	280
28-12	90	180	270	
28-15	80	110	250	280
28-16	80	110	250	280

Insert Arrangement	Degrees			
	W	X	Y	Z
28-17	80	110	250	280
28-18	70	145	215	290
28-19	80	110	250	280
28-20	80	110	250	280
28-21	80	110	250	280
28-22	70	145	215	290
32-1	80	110	250	280
32-2	70	145	215	290
32-3	80	110	250	280
32-5	35	110	250	325
32-6	80	110	250	280
32-7	80	125	235	280
32-8	80	125	235	280
32-9	80	110	250	280
32-13	80	110	250	280
32-15	35	110	250	280
32-17	45	110	250	
36-3	70	145	215	290
36-4	70	145	215	290
36-5		120	240	
36-6	35	110	250	325
36-7	80	110	250	280
36-8	80	110	250	280
36-9	80	125	235	280
36-10	80	125	235	280
36-14	90	180	270	
36-15	60	125	245	305
36-52	72	144	216	288

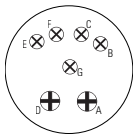
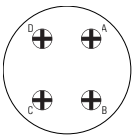
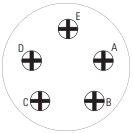
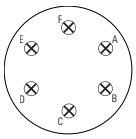
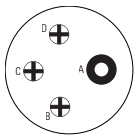
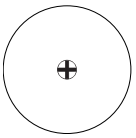
Rev. 1604

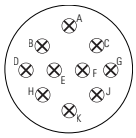
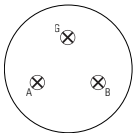
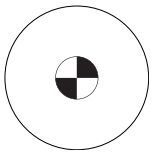
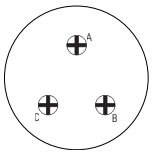
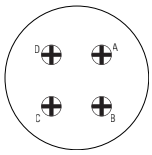
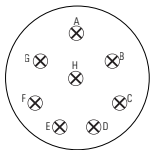
	12-5	14-53	16-7	16-9	16-10	16-11
Arrangement	12-5	14-53	16-7	16-9	16-10	16-11
Service Rating	A	Inst.	A	A	A	A
Number of Contacts	1 x #12	6 x #16	1 x #8 2 x #16	2 x #12 2 x #16	3 x #12	2 x #12

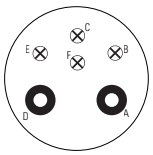
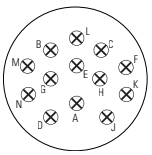
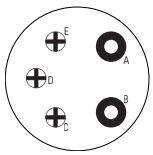
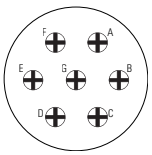
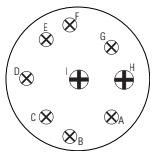
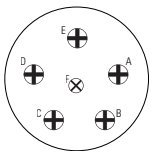
	16-12	18-1	18-3	18-4	18-5	18-8
Arrangement	16-12	18-1	18-3	18-4	18-5	18-8
Service Rating	A	B,C,F,G=A; Bal.=Inst.	D	D	D	A
Number of Contacts	1 x #4	10 x #16	2 x #12	4 x #16	2 x #12 1 x #16	1 x #12 7 x #16

	18-9	18-10	18-11	18-12	18-13	18-16
Arrangement	18-9	18-10	18-11	18-12	18-13	18-16
Service Rating	Inst.	A	A	A	A	C
Number of Contacts	2 x #12 5 x #16	4 x #12	5 x #12	6 x #16	1 x #8 3 x #12	1 x #12

	18-19	18-22	20-2	20-3	20-4	20-7
Arrangement	18-19	18-22	20-2	20-3	20-4	20-7
Service Rating	A	D	D	D	D	A,B,H,G=D; C,D,E,F=A
Number of Contacts	10 x #16	3 x #16	1 x #0	3 x #12	4 x #12	8 x #16

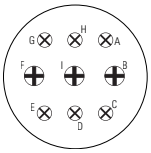







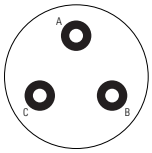
	20-8	20-11	20-14	20-15	20-16	20-17
Arrangement	20-8	20-11	20-14	20-15	20-16	20-17
Service Rating	Inst.	Inst.	A	A	A	A
Number of Contacts	2 x #8; 4 x #16	13 x #16	2 x #8 3 x #12	7 x #12	2 x #12 7 x #16	5 x #12 1 x #16

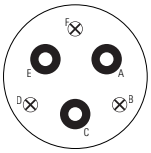
Contact Legend

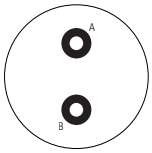
(Continued on next page)

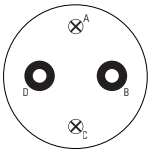
(Continued from previous page)

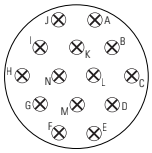




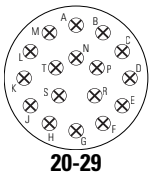


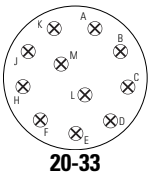


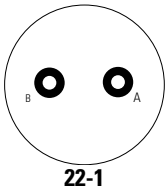


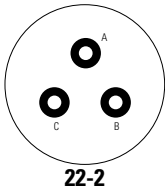


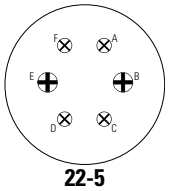
	20-18	20-19	20-22	20-23	20-24	20-27
Arrangement	A	A	A	A	A	A
Service Rating	3 x #12	3 x #8	3 x #8	2 x #8	2 x #8	14 x #16
Number of Contacts	6 x #16		3 x #16		2 x #16	

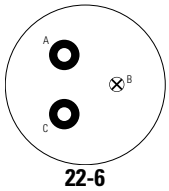




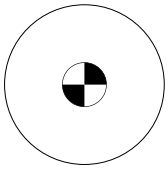


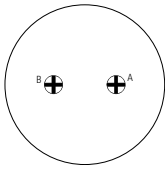


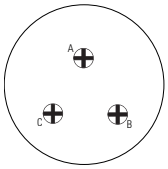


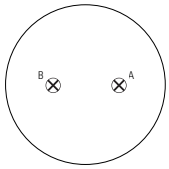


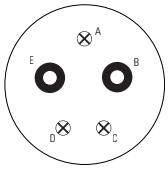
	20-29	20-33	22-1	22-2	22-5	22-6
Arrangement	A	A	D	D	D	D
Service Rating	17 x #16	11 x #16	2 x #8	3 x #8	2 x #12	2 x #8
Number of Contacts					4 x #16	1 x #16

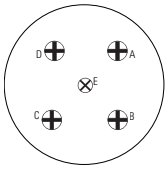




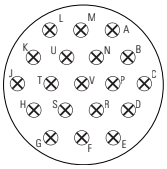


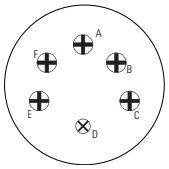


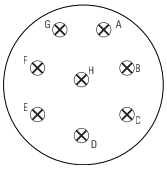


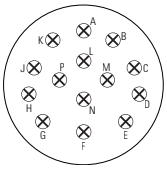


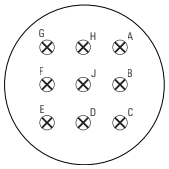
	22-7	22-8	22-9	22-11	22-12	22-13
Arrangement	E	E	E	B	D	E=D; A,B,C,D=A
Service Rating	1 x #0	2 x #12	3 x #12	2 x #16	2 x #8	4 x #12
Number of Contacts					3 x #16	1 x #16

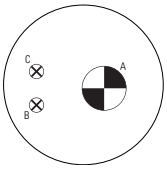






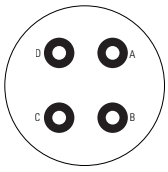
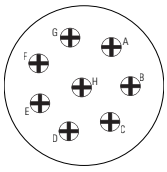
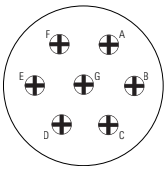
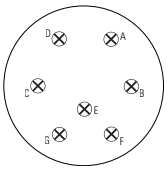
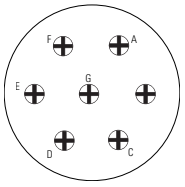




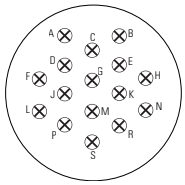
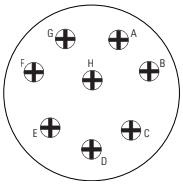
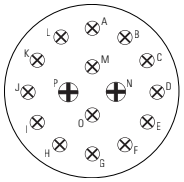
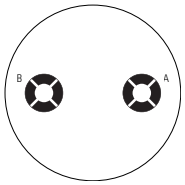
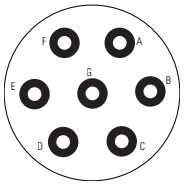


	22-14	22-15	22-18	22-19	22-20	22-21
Arrangement	A	D=E; A,B,C,E,F=A	A,B,F,G,H=D; C,D,E=A	A	A	A
Service Rating	19 x #16	5 x #12	8 x #16	14 x #16	9 x #16	1 x #0
Number of Contacts		1 x #16				2 x #16

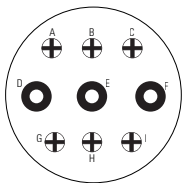
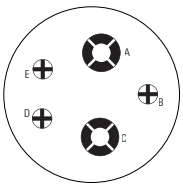
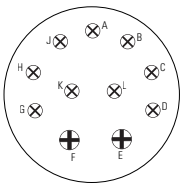
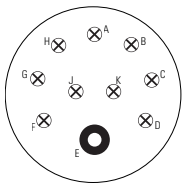
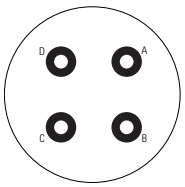
(Continued on next page)

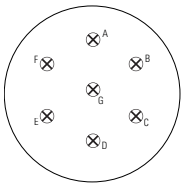
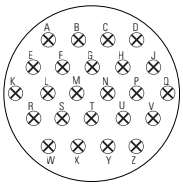
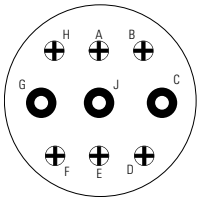
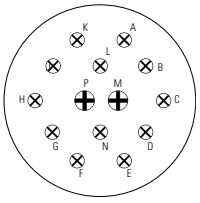
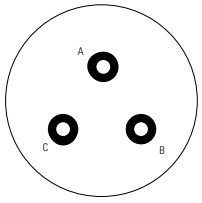
Arrangement	**22-22**	**22-23**	**22-28**	**22-33**	**24-2**
Service Rating	A	H=D; Bal.=A	A	A,B,C,D=D; E,F,G=A	D
Number of Contacts	4 x #8	8 x #12	7 x #12	7 x #16	7 x #12

Arrangement	**24-5**	**24-6**	**24-7**	**24-9**	**24-10**
Service Rating	A	A,G,H=D; Bal.= A	A	A	A
Number of Contacts	16 x #16	8 x #12	2 x #12 14 x #16	2 x #4	7 x #8

Arrangement	**24-11**	**24-12**	**24-20**	**24-21**	**24-22**
Service Rating	A	A	D	D	D
Number of Contacts	3 x #8 6 x #12	2 x #4 3 x #12	2 x #12 9 x #16	1 x #8 9 x #16	4 x #8

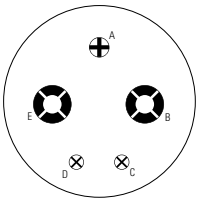






Arrangement	**24-27**	**24-28**	**28-1**	**28-2**	**28-3**
Service Rating	E	Inst.	A,J,E=D; Bal.=A	D	E
Number of Contacts	7 x #16	24 x #16	3 x #8 6 x #12	2 x #12 12 x #16	3 x #8

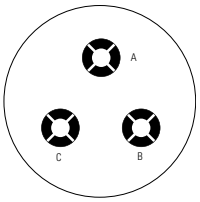
Contact Legend

(Continued on next page)

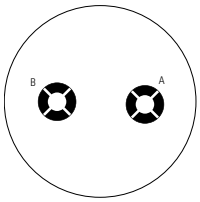
(Continued from previous page)



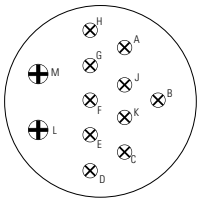
28-5
D
2 x #4
1 x #12
2 x #16



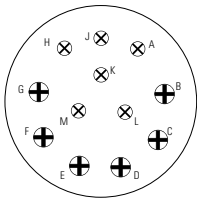
28-6
D
3 x #4



28-7
D
2 x #4

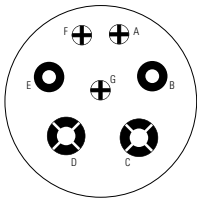


28-8
L,M=E; B=D; Bal.=A
2 x #12
10 x #16

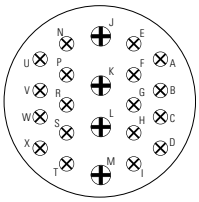


28-9
D
6 x #12
6 x #16

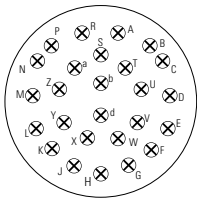
Arrangement
Service Rating
Number of Contacts



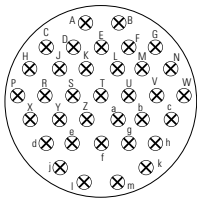
28-10
G=D; Bal.= A
2 x #4
2 x #8
3 x #12



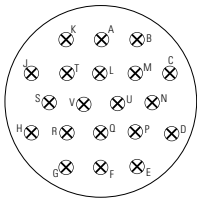
28-11
A
4 x #12
18 x #16



28-12
A
26 x #16

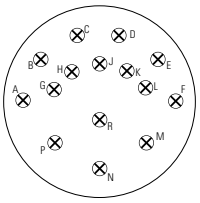


28-15
A
35 x #16

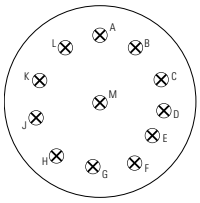


28-16
A
20 x #16

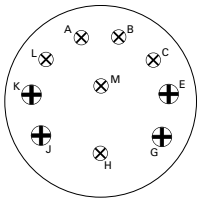
Arrangement
Service Rating
Number of Contacts



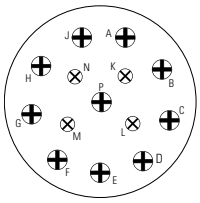
28-17
R=B; M,N,P=D; A to L =A
15 x #16



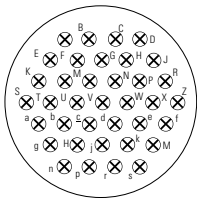
28-18
M=C; G,H,J,K,L= D;
A,B=A; Bal.=Inst.
12 x #16



28-19
H,M=B; A,B=D; Bal.=A.
4 x #12
6 x #16

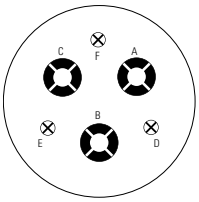


28-20
A
10 x #12
4 x #16

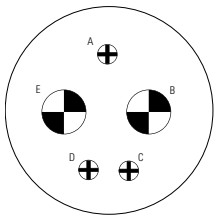


28-21
A
37 x #16

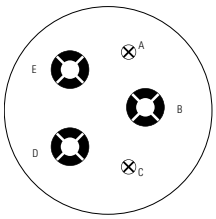
Arrangement
Service Rating
Number of Contacts



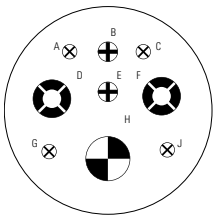
28-22
D
3 x #4
3 x #16



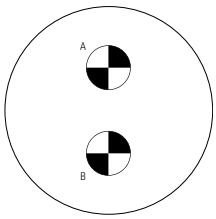
32-1
A=E; B,C,D,E=D
2 x #0
3 x #12



32-2
E
3 x #4
2 x #16



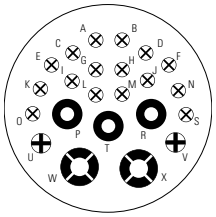
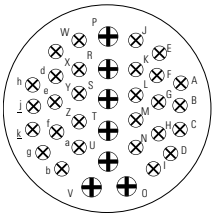
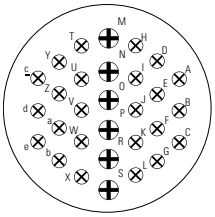
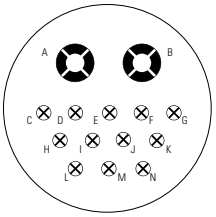
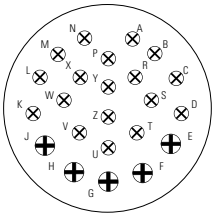
32-3
D
1 x #0; 2 x #4
2 x #12; 4 x #16



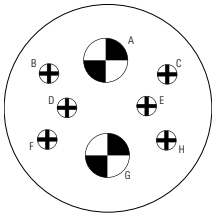
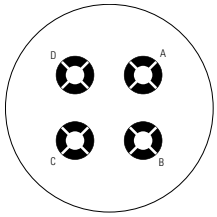
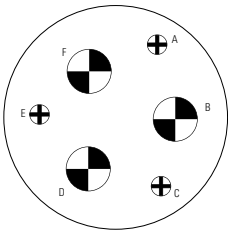
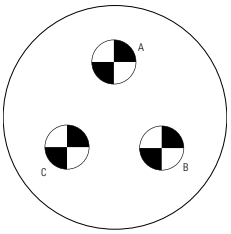
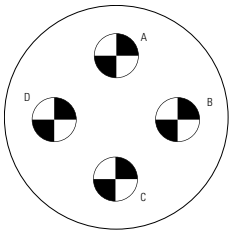
32-5
D
2 x #0

Arrangement
Service Rating
Number of Contacts

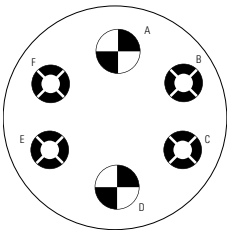
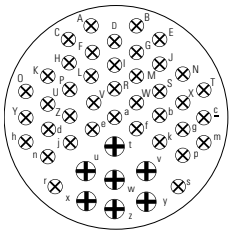
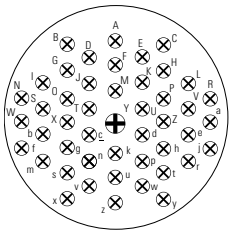
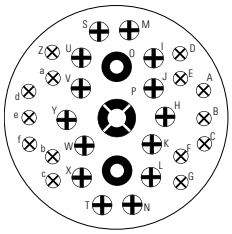
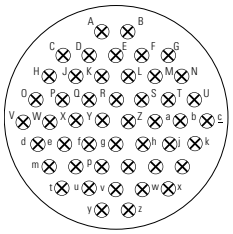
(Continued on next page)

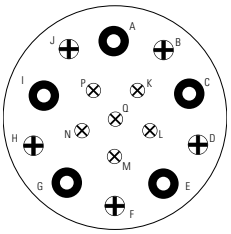
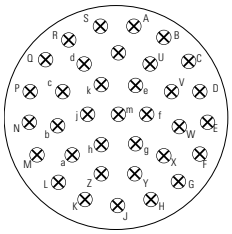
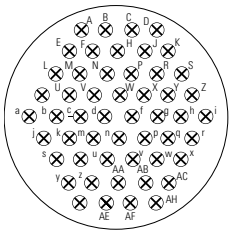
	32-6	32-7	32-8	32-9	32-13
Arrangement	A	A,B,H,J=Inst.; Bal.=A	A	D	D
Service Rating	2 x #4; 3 x #8	7 x #12	6 x #12	2 x #4	5 x #12
Number of Contacts	2 x #12; 16 x #16	28 x #16	24 x #16	12 x #16	18 x #16

	32-15	32-17	36-3	36-4	36-5
Arrangement	D	D	D	A=D; B,C=A	A
Service Rating	2 x #0	4 x #4	3 x #0	3 x #0	4 x #0
Number of Contacts	6 x #12		3 x #12		

	36-6	36-7	36-8	36-9	36-10
Arrangement	A	A	A	A	A
Service Rating	2 x #0	7 x #12	1 x #12	1 x #4; 2 x #8	48 x #16
Number of Contacts	4 x #4	40 x #16	46 x #16	14 x #12; 14 x #16	

	36-14	36-15	36-52
Arrangement	D	M=D; Bal.=A	A
Service Rating	5 x #8; 5 x #12;	35 x #16	
Number of Contacts	6 x #16		52 x #16

Contact Legend

QS