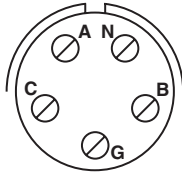


MIL-C-22992, Class L contact arrangements

Shell Size 28, 40 amp rating



28-12, 28-13
Three phase AC, 4 wire, grounding

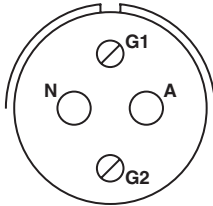
Cable:

28-12	IPCEA, type G, round, four #8 conductors
28-13	CO-04 HDF, (4/6-4/12R) 1090 per MIL-C-3432

Contacts:

Position	Size	Pin M39029/48	Socket M39029/49
A, B, C	6	-317	-329
N, G	6N	-318	-329

Shell Size 32, 60 amp rating



32-04, 32-05
Single phase AC, 2 wire, grounding

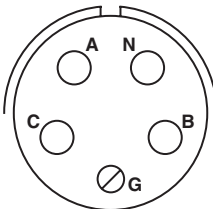
Cable:

32-04	IPCEA, type G, round, two #6 conductors
32-05	CO-02 HDF, (2/4-2/8R) 1100 per MIL-C-3432

Contacts:

Position	Size	Pin M39029/48	Socket M39029/49
A	4	-320	-331
N	4N	-321	-331
G1, G2	6N	-318	-329

Shell Size 32, 60 amp rating



32-12, 32-13
Three phase AC, 4 wire, grounding

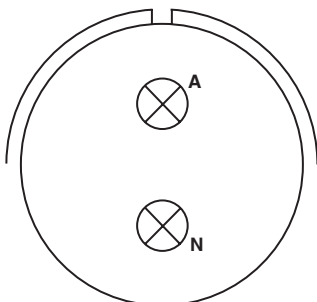
Cable:

32-12	IPCEA, type G, round, four #6 conductors
32-13	CO-04 HDF, (4/4-4/12R) 1290 per MIL-C-3432

Contacts:

Position	Size	Pin M39029/48	Socket M39029/49
A, B, C	4	-320	-331
N	4N	-321	-331
G	6N	-318	-329

Shell Size 44, 100 amp rating



44-02, 44-03
28 Volts DC, 2 wire

Cable:

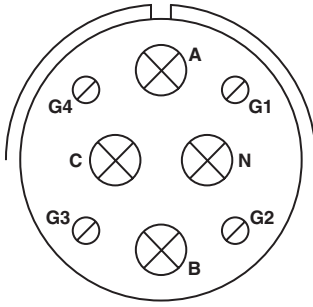
44-02	IPCEA, type W, round, two #2 conductors
44-03	CO-02 HDF, (2/1) 1385 per MIL-C-3432

Contacts:

Position	Size	Pin M39029/48	Socket M39029/49
A	1/0-1	-323	-333
N	1/0N-1	-324	-333

MIL-C-22992, Class L contact arrangements

Shell Size 44, 100 amp rating



44-12, 44-13
Three phase AC, 4 wire, grounding

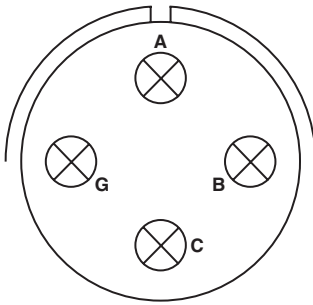
Cable:

44-12	IPCEA, type G, round, four #2 conductors
44-13	CO-04 HDF, (4/1-4/8R) 1620 per MIL-C-3432

Contacts:

Position	Size	Pin M39029/48	Socket M39029/49
A, B, C	1/0-1	-323	-333
N	1/0N-1	-324	-333
G1, G2, G3, G4	6G	-319	-330

Shell Size 44, 100 amp rating For Navy Ground Support Equipment use only.



44-50, 44-51, 44-52, 44-56
Three phase AC, 3 wire, grounding

44-50	Available in MS90555 & MS90558 only 4 each # 1 conductors
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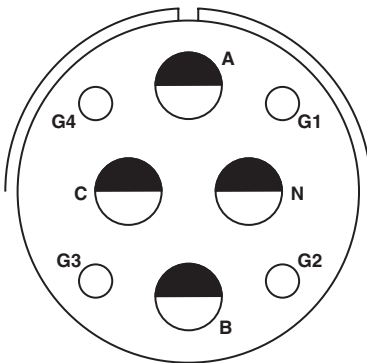
Cable:

44-51	Available in MS90556 & MS90557 only IPCEA, type W, round, four # 1 conductors
44-52	Available in MS90556 only IPCEA, type W, round, four # 2 conductors
44-56	Available in MS90556 only IPCEA, type W, round, four # 6 conductors

Contacts:

Position	Size	Pin M39029/48	Socket M39029/49
A, B, C	1/0-1	-323	-333
G	1/0N-1	-324	-333

Shell Size 52, 200 amp rating



52-12, 52-13
Three phase AC, 4 wire, grounding

Cable:

52-12	IPCEA, type G, round, four #4/0 conductors
52-13	CO-04 HDE, (4/0000-4/4R) 2380 per MIL-C-3432

Contacts:

Position	Size	Pin M39029/48	Socket M39029/49
A, B, C	4/0	-327	-335
N	4/0N	-328	-335
G1, G2, G3, G4	4G	-322	-332

MIL-C-22992, QWLD

insert arrangements

Insert Arrangement		Service Rating	Total Contacts	Contact Size				
MS Approved	Industrial			0	4	8	12	16
12-5		D	1				1	
	12-48	A	3					3
	12-49	A	2					2
14-3		A	1			1		
	14-53	Inst.	6					6
16-2		E	1				1	
16-7		A	3			1		2
16-9		A	4				2	2
16-10		A	3				3	
16-11		A	2				2	
16-12		A	1	1				
16-13		A	2				2	
	16-61	A	7				7	
18-1		B, C, F, G = A; Bal. = Inst.	10					10
	18-3	D	2				2	
18-4		D	4					4
18-5		D	3				2	1
18-6		D	1	1				
18-7		B	1			1		
18-8		A	8				1	7
18-9		Inst.	7				2	5
	18-10	A	4				4	
18-11		A	5				5	
	18-12	A	6					6
18-13		A	4			1	3	
18-14		A	2		1			1
18-15		A	4				4	
18-16		C	1				1	
	18-17	Inst.	7				2	5
	18-19	A	10					10
	18-20	A	5					5
	18-22	D	3					3
	18-24	B, C, F, G = A; Bal. = Inst.	10					10
	18-29	A	5					5
	18-30	A	5					5
	18-31	A	5					5
20-2		D	1	1				
	20-3	D	3				3	
20-4		D	4				4	
	20-6	D	3					3
20-7		A, B, H, G = D; C, D, E, F = A	8					8
20-8		Inst.	6			2		4

Insert Arrangement		Service Rating	Total Contacts	Contact Size				
MS Approved	Industrial			0	4	8	12	16
20-9		H = D; Bal. = A	8				1	7
	20-11	Inst.	13					13
	20-12	A	2		1			1
20-14		A	5			2	3	
20-15		A	7				7	
20-16		A	9				2	7
20-17		A	6				5	1
20-18		A	9				3	6
	20-19	A	3			3		
	20-20	A	4		1		3	
20-21		A	9				1	8
20-22		A	6			3		3
	20-23	A	2			2		
20-24		A	4			2		2
	20-25	Inst.	13					13
20-27		A	14					14
20-29		A	17					17
	20-30	Inst.	13					13
20-33		A	11					11
	22-1	D	2			2		
22-2		D	3			3		
	22-4	A	4			2	2	
22-5		D	6				2	4
	22-6	D	3			2		1
22-7		E	1	1				
	22-8	E	2				2	
22-9		E	3				3	
22-10		E	4					4
22-11		B	2					2
22-12		D	5			2		3
	22-13	E = D; A, B, C, D = A	5				4	1
22-14		A	19					19
22-15		D = E; A, B, C, E, F = A	6				5	1
	22-16	A	9				3	6
22-17		A = D; Bal. = A	9				1	8
22-18		A, B, F, G, H = D; C, D, E = A	8					8
22-19		A	14					14
	22-20	A	9					9
22-21		A	3	1				2
22-22		A	4			4		
22-23		H = D; Bal. = A	8				8	
	22-24	C, D, E = D; A, B, F = A	6				2	4

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insert arrangements

Insert Arrangement		Service Rating	Total Contacts	Contact Size				
MS Approved	Industrial			0	4	8	12	16
22-27		J = D; Bal. = A	9			1		8
	22-28	A	7				7	
	22-33	A, B, C, D = D; E, F, G = A	7					7
	22-34	D	5				3	2
22-36		H = D; Bal. = A	8				8	
24-2		D	7				7	
	24-3	D	7				2	5
	24-5	A	16					16
24-6		A, G, H = D; Bal. = A	8				8	
24-7		A	16				2	14
	24-9	A	2		2			
24-10		A	7			7		
24-11		A	9			3	6	
24-12		A	5		2		3	
24-16		A, B, F, G = D; C, D, E = A	7			1	3	3
	24-17	D	5				2	3
24-20		D	11				2	9
24-21		D	10			1		9
24-22		D	4			4		
24-27		E	7					7
24-28		Inst.	24					24
28-1		A, J, E = D; Bal. = A	9			3	6	
28-2		D	14				2	12
28-3		E	3			3		
28-4		G, P, S = E; Bal. = D	9				2	7
28-5		D	5		2		1	2
	28-6	D	3		3			
	28-7	D	2		2			
28-8		L, M = E; B = D; Bal. = A	12				2	10
28-9		D	12				6	6
28-10		G = D; Bal. = A	7		2	2	3	
28-11		A	22				4	18
28-12		A	26					26
	28-13	A	26					26
28-15		A	35					35
	28-16	A	20					20
28-17		R = B; M, N, P = D; A to L = A	15					15
28-18		M = C; G, H, J, K, L = D; A, B = H; Bal. = Inst.	12					12
28-19		H, M = B; A, B = D; Bal. = A	10				4	6
28-20		A	14				10	4

Insert Arrangement		Service Rating	Total Contacts	Contact Size				
MS Approved	Industrial			0	4	8	12	16
28-21		A	37					37
28-22		D	6		3			3
32-1		A = E; Bal. = D	5	2			3	
32-2		E	5		3			2
32-3		D	9	1	2		2	4
	32-4	F, J, K, N = A; Bal. = D	14				2	12
	32-5	D	2	2				
32-6		A	23		2	3	2	16
32-7		A, B, h, j = Inst.; Bal. = A	35				7	28
	32-8	A	30				6	24
32-9		D	14		2			12
	32-10	A, F = E; G = B; B, E = D; C, D = A	7		2	2		3
	32-12	C, D, E, F, G = A; Bal. = D	15				5	10
32-13		D	23				5	18
32-15		D	8	2			6	
	32-16	A	23		2	3	2	16
32-17		D	4		4			
32-73		A	46					46
	36-1	D	22				4	18
36-3		D	6	3			3	
	36-4	A = D; B, C = A	3	3				
36-5		A	4	4				
36-6		A	6	2	4			
36-7		A	47				7	40
36-8		A	47				1	46
36-9		A	31		1	2	14	14
36-10		A	48					48
	36-11	A	48					48
	36-12	A	48					48
	36-13	N, P, Q = E; Bal. = A	17				2	15
	36-14	D	16			5	5	6
36-15		M = D; Bal. = A	35					35
	36-16	A	47				7	40
	36-17	A	47				7	40
	36-18	A	31		1	2	14	14
	36-20	A	34			2	2	30
36-52		A	52					52
40-1		D	30				6	24
40-9		A	47			1	22	24
40-56		A	85					85
44-52		A	104					104

QWLD

special insert arrangements

Insert Arrangement	Service Rating	Total Con-acts	Contact Size																			
			0	4	8	12	16	Coax**														
								0	4	8	12											
16-59	A	4				4																
20-51	A	3			3																	
20-57	A	7				7*																
20-58	A	10				5	5															
20-59	A	3			3*																	
20-66	A	6				5*	1															
20-79	A/D	8				1	7															
22-63	A	12				4	8															
22-65	A/D	8				8*																
22-70	A	13				8	5															
22-80	A	3			3*																	
24-51	A	5			5																	
24-52	Hi Volt.	1				1																
24-53	A	5			5																	
24-58	A	13			3	3	7															
24-59	A	14				7	7															
24-60	A	7			7*																	
24-65	A	15				11	4															
24-66	D	7				7																
24-67	Inst.	19				19																
24-71	A	7			7*																	
24-75	A	7			7*																	
24-79	A	5			5																	
24-80	Inst.	23					23															
24-84	A	19				1																18
28-51	A	12				12																
28-59	A	17				7	10															
28-66	A	16			2	14																
28-72	Coax	3										3										
28-74	A	16			7*		9															
28-75	A	16			7*		9															
28-79	A	16			7		9															
28-82	D	6			2	4																
28-84	A	9			9																	
32-52	D	8	2			6																
32-53	Inst./E	42				5	37															
32-56	A	30				6*	24															
32-57	Coax	8				6		2														
32-58	Coax	4										4										
32-60	A	23					15						8									
32-62	Coax	23		2	1	2	16						2									
32-64	Inst.	54					54															
32-68	A	16					12					4										
32-75	Coax	9				2							7									
32-76	A	19				19																
32-79	D	5		4	1																	

Insert Arrangement	Service Rating	Total Con-acts	Contact Size																			
			0	4	8	12	16	Coax**														
								0	4	8	12											
36-51	D	4	2	2																		
36-54	A	39			8		31															
36-55	A	39			8*		31															
36-59	A	53					3*	50														
36-60	A	47					7*	40														
36-64	Coax	4											4									
36-65	Coax	4											4									
36-71	A	53					3	50														
36-73	Coax	7																		7		
36-74	A	44											43								1	
36-75	A	48											48*									
36-76	A	47											47									
36-77	D	7		7																		
36-78	A	14					12						2									
36-79	A	20						20														
36-80	A	20						20*														
36-83	Coax	7																		7		
36-85	A/D	35											35*									
40-53	A	60											60									
40-57	E	4	4																			
40-61	A	59					1	3	55													
40-62	A	60							60													
40-63	A	61							61*													
40-64	Coax	36						3	20												13	
40-66	Coax	4											4									
40-67	A	11							1					10								
40-68	A	21					21															
40-70	A	61							61													
40-72	A	11							1					10								
40-73	A	61							61													
40-74	A	6							1				4	1								
40-75	E	5	4						1													
40-80	A	11							1													
40-81	A	62											62*									
40-82	A	62											62									
40-85	A	60											60*									
40-86	E	4											4									
40-87	D	7																				
44-53	A	36											18								18	
48-51†	A	56							10				42	4								
48-52†	A	61											56	5								
48-53†	D	37										37										
48-54†	A	56							10				42	4								
48-55†	A	78							6	2	2		68									
48-57†	A	56	4						10				42									
48-60†	A	56							10				42	4								

* Crimp contacts accommodate wire the same size as the contact as well as wire of the next smaller, even size. Arrangements identified with an asterisk (*) are exceptions. See insert arrangement drawings on pages 39-47 for application wire size.

** Coaxial cable data can be found on insert arrangement drawings, pages 39-47. For further information on coaxial contacts and cable see catalog 12-130.

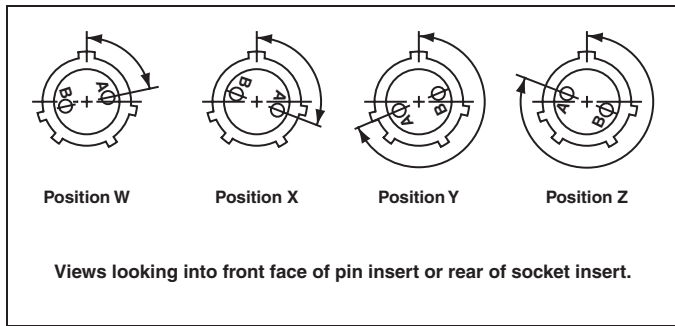
† Consult Sidney, NY for availability.

MIL-C-22992, QWLD

alternate insert rotations

To avoid cross-plugging problems in applications requiring the use of more than one connector of the same size and arrangement, alternate insert rotations are available as indicated in the accompanying chart.

As shown in the diagram below, the front face of the pin insert is rotated within the shell in a clockwise direction from the normal shell key. The socket insert would be rotated counterclockwise the same number of degrees in respect to the normal shell key.



The following insert arrangements have the same alternate insert rotations for W, X, Y and Z which are:

Degrees			
W	X	Y	Z
80	110	250	280

16-7	20-14	22-16	24-3	24-21	28-16	32-9
18-5	20-16	22-17	24-4	24-28	28-17	32-10
18-9	20-20	22-18	24-5	28-1	28-19	32-12
18-13	20-22	22-19	24-6	28-4	28-20	32-13
18-14	22-3	22-21	24-7	28-8	28-21	36-1
20-7	22-6	22-24	24-12	28-9	32-1	36-7
20-8	22-12	22-25	24-16	28-10	32-3	36-8
20-9	22-14	22-33	24-17	28-11	32-4	36-13
20-12	22-15	22-34	24-20	28-15	32-6	

Insert Arrangement	Degrees			
	W	X	Y	Z
16-9	35	110	250	325
16-10	90	180	270	-
16-11	35	110	250	325
16-13	35	110	250	325
16-61	80	-	-	280
18-1	70	145	215	290
18-3	35	110	250	325
18-4	35	110	250	325
18-8	70	-	-	290
18-10	-	120	240	-
18-11	-	170	265	-
18-12	80	-	-	280
18-15	-	120	240	-
18-19	-	120	240	-
18-20	90	180	270	-
18-22	70	145	215	290
18-29	90	180	270	-
20-3	70	145	215	290
20-4	45	110	250	-
20-5	35	110	250	325
20-6	70	145	215	290
20-15	80	-	-	280
20-17	90	180	270	-
20-18	35	110	250	325
20-19	90	180	270	-
20-21	35	110	250	325
20-23	35	110	250	325

Insert Arrangement	Degrees			
	W	X	Y	Z
20-24	35	110	250	325
20-27	35	110	250	325
20-29	80	-	-	280
22-1	35	110	250	325
22-2	70	145	215	290
22-4	35	110	250	325
22-5	35	110	250	325
22-8	35	110	250	325
22-9	70	145	215	290
22-10	35	110	250	325
22-11	35	110	250	325
22-13	35	110	250	325
22-20	35	110	250	325
22-22	-	110	250	-
22-23	35	-	250	-
22-27	80	-	250	280
22-28	80	-	-	280
22-36	90	-	270	-
24-2	80	-	-	280
24-9	35	110	250	325
24-10	80	-	-	280
24-11	35	110	250	325
24-22	45	110	250	-
24-27	80	-	-	280
28-2	35	110	250	325
28-3	70	145	215	290
28-5	35	110	250	325

Insert Arrangement	Degrees			
	W	X	Y	Z
28-6	70	145	215	290
28-7	35	110	250	325
28-12	90	180	270	-
28-18	70	145	215	290
28-22	70	145	215	290
32-2	70	145	215	290
32-5	35	110	250	325
32-7	80	125	235	280
32-8	80	125	235	280
32-15	35	110	250	280
32-17	45	110	250	-
32-73	36	-	-	-
36-3	70	145	215	290
36-4	70	145	215	290
36-5	-	120	240	-
36-6	35	110	250	325
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
40-1	65	130	235	300
40-9	65	125	225	310
40-56	72	144	216	288
44-52	72	135	225	288

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contact arrangements

front face of pin insert or rear of socket insert illustrated

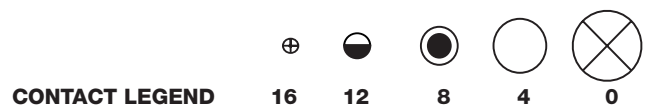
Insert Arrangement	12-5	12-48	12-49	14-3	14-53	16-2
Service Rating	D	A	A	A	Inst.	E
Number of Contacts	1	3	2	1	6	1
Contact Size	12	16	16	8	16	12

Insert Arrangement	16-7	16-9	16-10	16-11	16-12	16-13
Service Rating	A	A	A	A	A	A
Number of Contacts	1 2	2 2	3	2	1	2*
Contact Size	8 16	12 16	12	12	4	12

Insert Arrangement	16-61	18-1	18-3	18-4	18-5	18-6
Service Rating	A	B, C, F, G = A; Bal. = Inst.	D	D	D	D
Number of Contacts	7	10	2	4	2 1	1
Contact Size	16	16	12	16	12 16	4

Insert Arrangement	18-7	18-8	18-9	18-10	18-11	18-12
Service Rating	B	A	Inst.	A	A	A
Number of Contacts	1	1 7	2 5	4	5	6
Contact Size	8	12 16	12 16	12	12	16

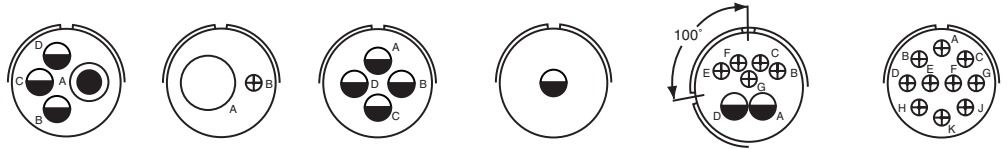
*A = Iron; B = Constantan



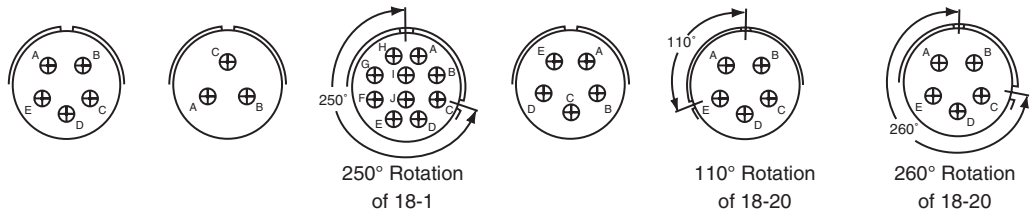
MIL-C-22992, QWLD

contact arrangements

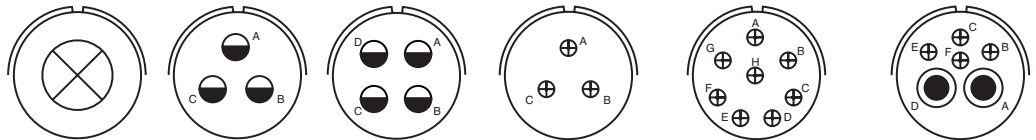
front face of pin insert or rear of socket insert illustrated



Insert Arrangement	18-13	18-14	18-15	18-16	18-17	18-19
Service Rating	A	A	A	C	Inst.	A
Number of Contacts	1 3	1 1	4**	1	2 5	10
Contact Size	8 12	4 16	12	12	12 16	16



Insert Arrangement	18-20	18-22	18-24	18-29	18-30	18-31
Service Rating	A	D	B, C, F, G = A, Bal. = Inst.	A	A	A
Number of Contacts	5	3	10	5	5	5
Contact Size	16	16	16	16	16	16



Insert Arrangement	20-2	20-3	20-4	20-6	20-7	20-8
Service Rating	D	D	D	D	A, B, H, G = D; C, D, E, F = A	Inst.
Number of Contacts	1	3	4	3	8	2 4
Contact Size	0	12	12	16	16	8 16

**A, C = Iron; B, D = Constantan



MIL-C-22992, QWLD

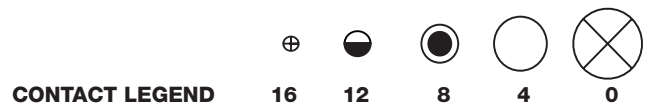
contact arrangements

front face of pin insert or rear of socket insert illustrated

Insert Arrangement	20-9	20-11	20-12	20-14	20-15	20-16
Service Rating	H = D; Bal. = A	Inst.	A	A	A	A
Number of Contacts	1 7	13	1 1	2 3	7	2 7
Contact Size	12 16	16	4 16	8 12	12	12 16

Insert Arrangement	20-17	20-18	20-19	20-20	20-21	20-22
Service Rating	A	A	A	A	A	A
Number of Contacts	5 1	3 6	3	1 3	1 8	3 3
Contact Size	12 16	12 16	8	4 12	12 16	8 16

Insert Arrangement	20-23	20-24	20-25	20-27	20-29	20-30
Service Rating	A	A	Inst.	A	A	Inst.
Number of Contacts	2	2 2	13	14	17	13
Contact Size	8	8 16	16	16	16	16



MIL-C-22992, QWLD

contact arrangements

front face of pin insert or rear of socket insert illustrated

Insert Arrangements	20-33	22-1	22-2	22-4	22-5
Service Rating	A	D	D	A	D
Number of Contacts	11	2	3	2 2	2 4
Contact Size	16	8	8	8 12	12 16

Insert Arrangement	22-6	22-7	22-8	22-9	22-10
Service Rating	D	E	E	E	E
Number of Contacts	2 1	1	2	3	4
Contact Size	8 16	0	12	12	16

Insert Arrangement	22-11	22-12	22-13	22-14	22-15
Service Rating	B	D	E = D; A, B, C, D = A	A	D = E; A, B, C, E, F = A
Number of Contacts	2	2 3	4 1	19	5 1
Contact Size	16	8 16	12 16	16	12 16

CONTACT LEGEND	16	12	8	4	0

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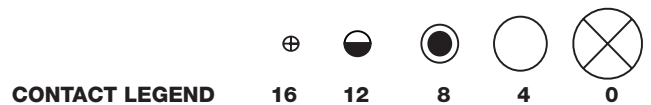
contact arrangements

front face of pin insert or rear of socket insert illustrated

Insert Arrangement	22-16	22-17	22-18	22-19	22-20
Service Rating	A	A = D; Bal. = A	A, B, F, G, H = D; C, D, E = A	A	A
Number of Contacts	3 6	1 8	8	14	9
Contact Size	12 16	12 16	16	16	16

Insert Arrangement	22-21	22-22	22-23	22-24	22-27
Service Rating	A	A	H = D; Bal. = A	C, D, E = D; A, B, F = A	J = D; Bal. = A
Number of Contacts	1 2	4	8	2 4	1 8
Contact Size	0 16	8	12	12 16	8 16

Insert Arrangement	22-28	22-33	22-34	22-36	24-2
Service Rating	A	A, B, C, D = D; E, F, G = A	D	H = D; Bal. = A	D
Number of Contacts	7	7	3 2	8	7
Contact Size	12	16	12 16	12	12



MIL-C-22992, QWLD

contact arrangements

front face of pin insert or rear of socket insert illustrated

Insert Arrangement	24-3	24-5	24-6	24-7	24-9
Service Rating	D	A	A, G, H = D; Bal. = A	A	A
Number of Contacts	2 5	16	8	2 14	2
Contact Size	12 16	16	12	12 16	4

Insert Arrangement	24-10	24-11	24-12	24-16	24-17
Service Rating	A	A	A	A, B, F, G = D; C, D, E = A	D
Number of Contacts	7	3 6	2 3	1 3 3	2 3
Contact Size	8	8 12	4 12	8 12 16	12 16

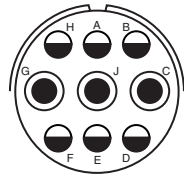
Insert Arrangement	24-20	24-21	24-22	24-27	24-28
Service Rating	D	D	D	E	Inst.
Number of Contacts	2 9	1 9	4	7	24
Contact Size	12 16	8 16	8	16	16



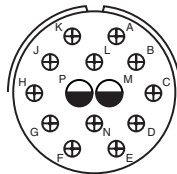
MIL-C-22992, QWLD

contact arrangements

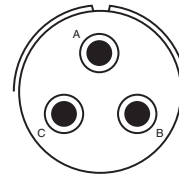
front face of pin insert or rear of socket insert illustrated



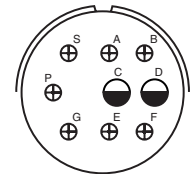
28-1
A, J, E = D; Bal. = A
3 6
8 12



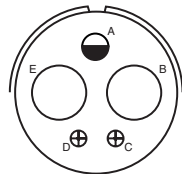
28-2
D
2 12
12 16



28-3
E
3
8

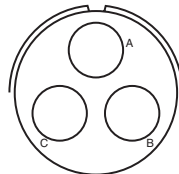


28-4
G, P, S = E; Bal. = D
2 7
12 16

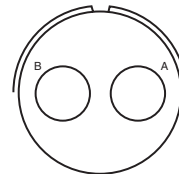


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

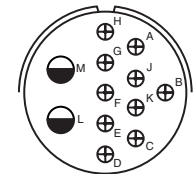
28-5
D
2 1 2
4 12 16



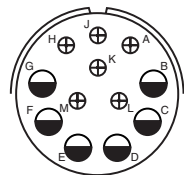
28-6
D
3
4



28-7
D
2
4

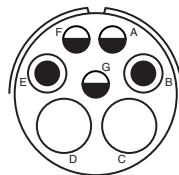


28-8
L, M = E; B = D; Bal. = A
2 10
12 16

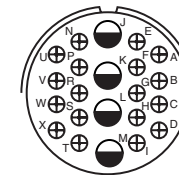


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

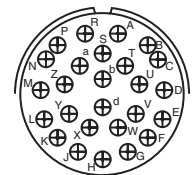
28-9
D
6 6
12 16



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

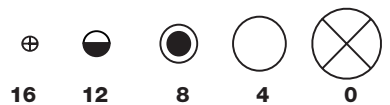


28-11
A
4 18
12 16



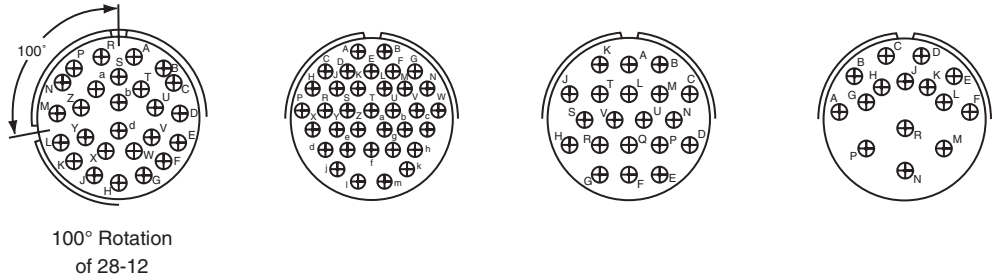
28-12
A
26
16

CONTACT LEGEND

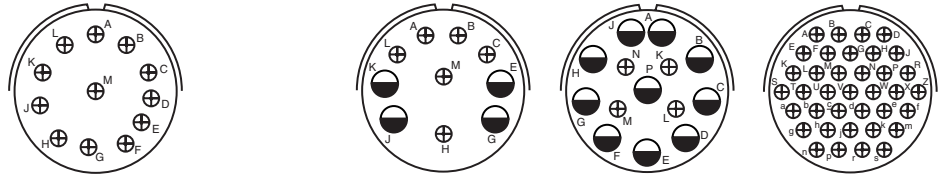


MIL-C-22992, QWLD contact arrangements

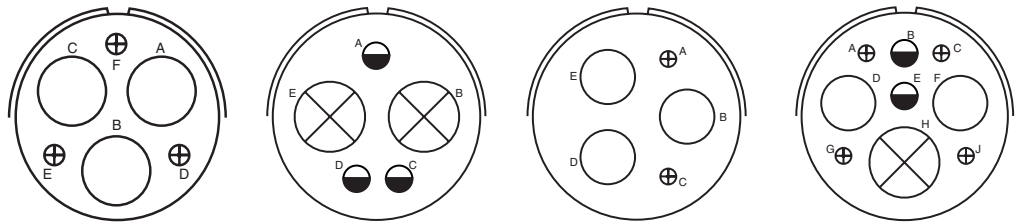
front face of pin insert or rear of socket insert illustrated



Insert Arrangement	28-13	28-15	28-16	28-17
Service Rating	A	A	A	R = B; M, N, P = D; A to L = A
Number of Contacts	26	35	20	15
Contact Size	16	16	16	16



Insert Arrangement	28-18	28-19	28-20	28-21
Service Rating	M = C; G, H, J, K, L = D; A, B = H; Bal. = Inst.	H, M = B; A = D; Bal = A	A	A
Number of Contacts	12	4 6	10 4	37
Contact Size	16	12 16	12 16	16

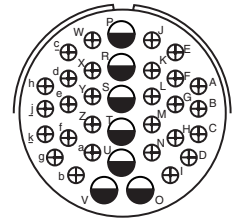
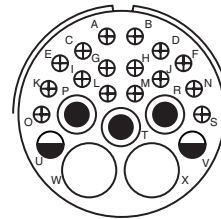
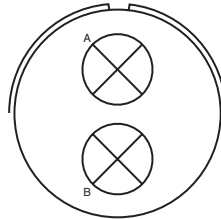
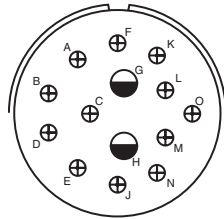


Insert Arrangement	28-22	32-1	32-2	32-3
Service Rating	D	A = E; Bal. = D	E	D
Number of Contacts	3 3	2 3	3 2	1 2 2 4
Contact Size	4 16	0 12	4 16	0 4 12 16



MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated



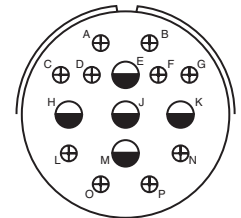
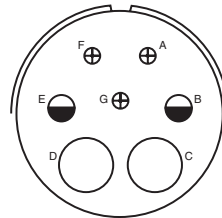
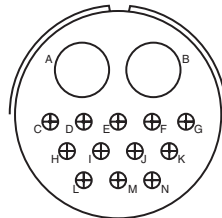
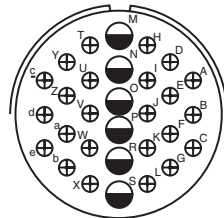
Insert Arrangement
Service Rating
Number of Contacts
Contact Size

32-4
F, J, K, N = A; Bal. = D
2 12
12 16

32-5
D
2
0

32-6
A
2 3 2 16
4 8 12 16

32-7
A, B, h, j = Inst; Bal. = A
7 28
12 16



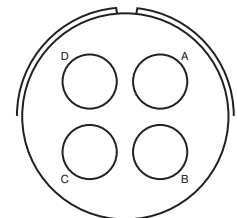
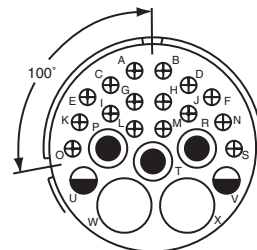
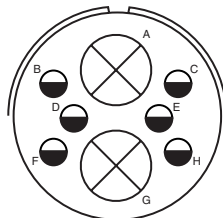
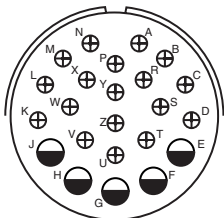
Insert Arrangement
Service Rating
Number of Contacts
Contact Size

32-8
A
6 24
12 16

32-9
D
2 12
4 16

32-10
A, F = E, G = B; B, E = D; C, D = A
2 2 3
4 8 16

32-12
C, D, E, F, G = A; Bal. = D
5 10
12 16



100° Rotation
of 32-6

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

32-13
D
5 18
12 16

32-15
D
2 6
0 12

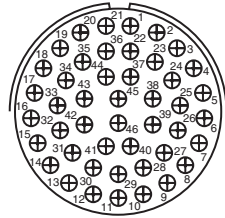
32-16
A
2 3 2 16
4 8 12 16

32-17
D
4
4



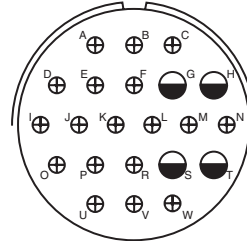
MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated

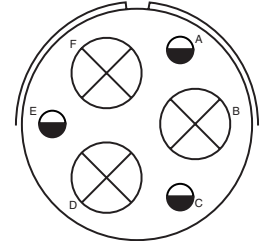


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

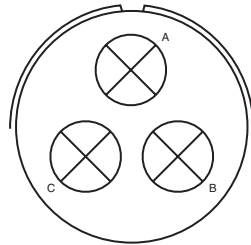
32-73
A
46
16



36-1
D
4 18
12 16

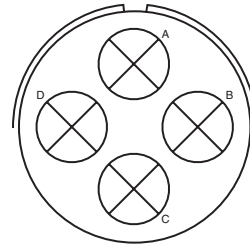


36-3
D
3 3
0 12

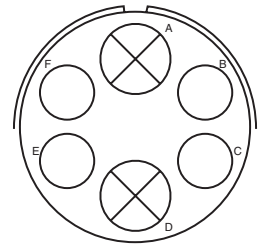


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

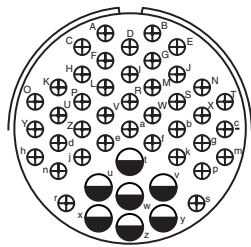
36-4
A = D; B, C = A
3
0



36-5
A
4
0

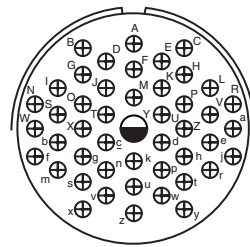


36-6
A
2 4
0 4

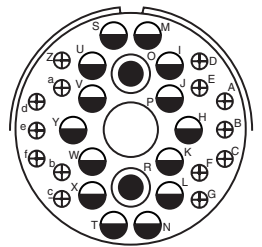


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

36-7
A
7 40
12 16

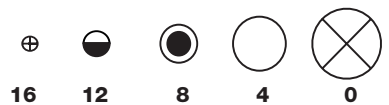


36-8
A
1 46
12 16



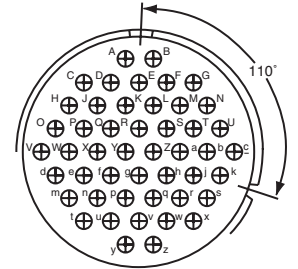
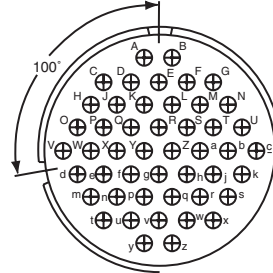
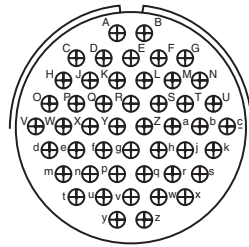
36-9
A
1 2 14 14
4 8 12 16

CONTACT LEGEND



MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated



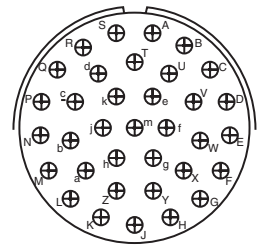
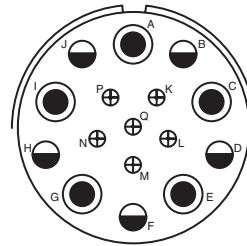
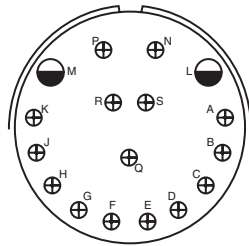
Insert Arrangement 36-10
Service Rating A
Number of Contacts 48
Contact Size 16

100° Rotation
of 36-10

36-11
A
48
16

110° Rotation
of 36-10

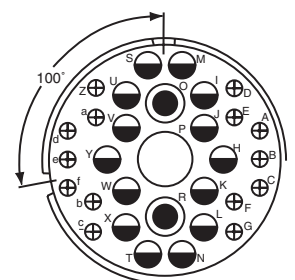
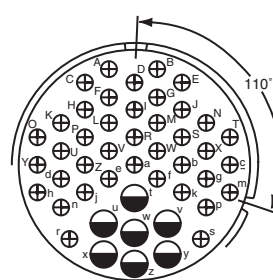
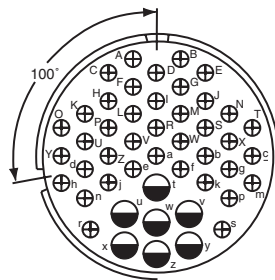
36-12
A
48
16



Insert Arrangement 36-13
Service Rating N, P, Q = E; Bal. = A
Number of Contacts 2 15
Contact Size 12 16

36-14
D
5 5 6
8 12 16

36-15
M = D; Bal. = A
35
16



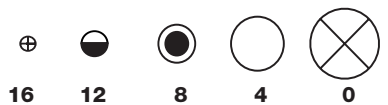
Insert Arrangements 36-16
Service Rating A
Number of CContacts 7 40
Contact Size 12 16

100° Rotation
of 36-7

36-17
A
7 40
12 16

100° Rotation
of 36-9

36-18
A
1 2 14 14
4 8 12 16



CONTACT LEGEND

16

12

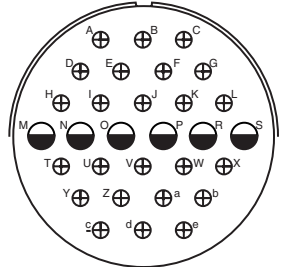
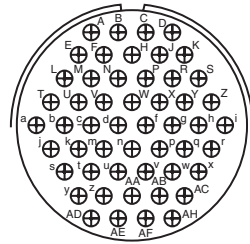
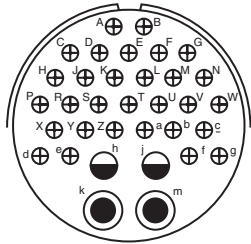
8

4

0

MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated

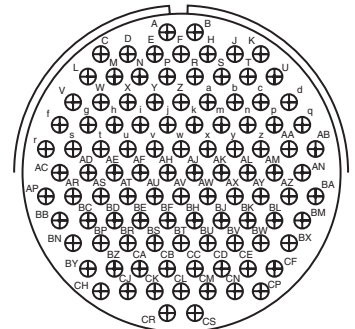
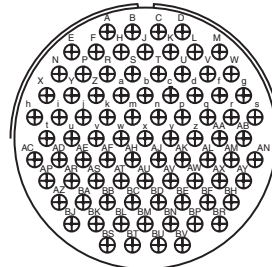
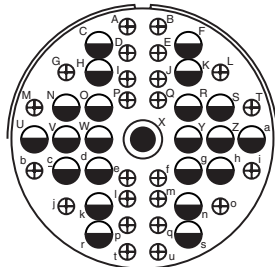


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

36-20
A
2 2 30
8 12 16

36-52
A
52
16

40-1
D
6 24
12 16



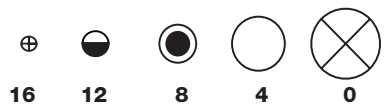
Insert Arrangement
Service Rating
Number of Contacts
Contact Size

40-9
A
1 22 24
8 12 16

40-56
A
85
16

44-52
A
104
16

CONTACT LEGEND





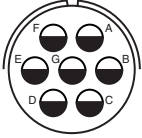
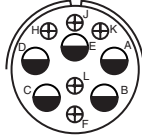

QWLD

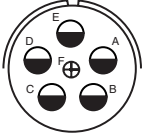
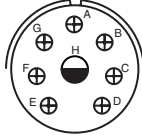
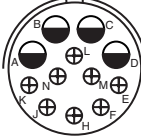
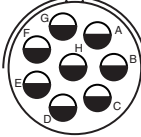
special arrangements

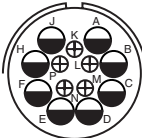
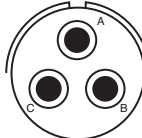

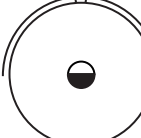
Ever expanding requirements for more complex circuits in ground equipment and elevated altitude applications has prompted Amphenol to provide inserts not covered by the MS drawings. Pictured here and on the following pages are insert layouts which have anywhere from one contact

(high tension) to the 78 contact insert in shell size 48. Many of these special inserts are also available in alternate keyway positions. Please contact Amphenol, Sidney, NY or your local Amphenol sales office for arrangements particular to your circuit application.



front face of pin insert or rear of socket insert illustrated

					
Insert Arrangement	16-59	20-51	20-57	20-58	20-59
Service Rating	A	A	A	A	A
Number of Contacts	4	3*	7*	5 5	3*
Contact Size	12	8	12 for #14 or 16 wire	12 16	8 for #10 or 12 wire

				
Insert Arrangement	20-66	20-79	22-63	22-65
Service Rating	A	H = D; Bal. = A	A	H = D; Bal. = A
Number of Contacts	1 5	7* 1*	4 8	8*
Contact Size	16 12 or #10 wire	16 12 for #16 wire	12 16	12 for #14 or 16 wire

				
Insert Arrangement	22-70	22-80	24-51	24-52
Service Rating	A	A	A	Hi-Volt
Number of Contacts	8 5	3*	5*	1
Contact Size	12 16	8 for #10 or 12 wire	B, E for AN #10 or 12 wire A, C, D for AN #8 wire	12

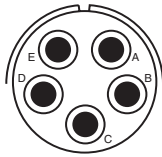
*Solderless

					
CONTACT LEGEND	16	12	8	4	0

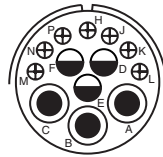
QWLD

special arrangements

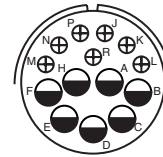
front face of pin insert or rear of socket insert illustrated



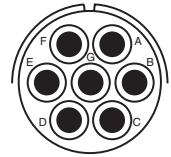
24-53
A
5*
8



24-58
A
3 3 7
8 12 16

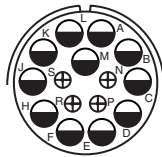


24-59
A
7 7
12 16

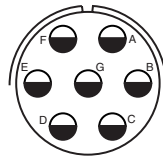


24-60
A
7*
8 for #10 or 12 wire

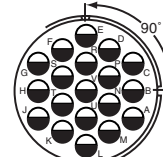
Insert Arrangement
Service Rating
Number of Contacts
Contact Size



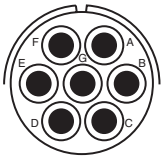
24-65
A
11 4
12 16



24-66
D
7
12

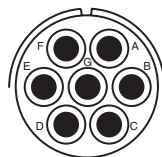


24-67
Inst.
19
12

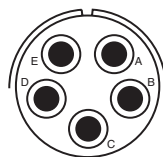


24-71
A
2* 5*
8 8 for #10 or 12 wire

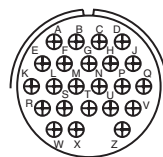
Insert Arrangement
Service Rating
Number of Contacts
Contact Size



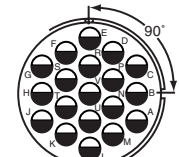
24-75
A
5 2
8 8 for #16 wire



24-79
A
5
8



24-80
Inst.
23
16



24-84
A
1 18
12 12 (Coax) RG-188/U
or RG-174/U

Insert Arrangement
Service Rating
Number of Contacts
Contact Size



CONTACT LEGEND

16

12

8

4

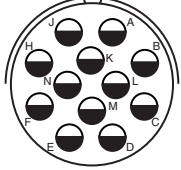
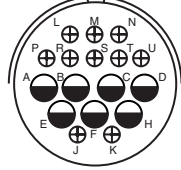
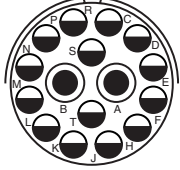
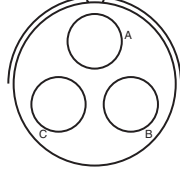

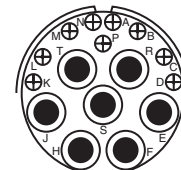

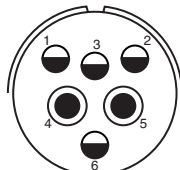
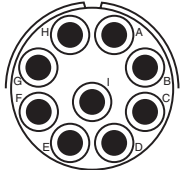
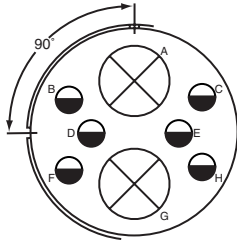
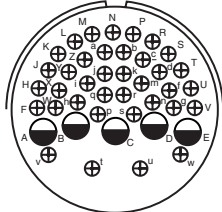
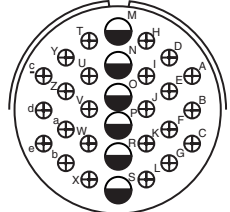
0

*Solderless

QWLD

special arrangements

front face of pin insert or rear of socket insert illustrated

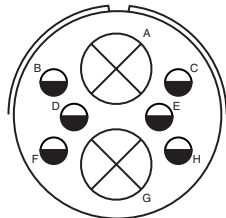
				
Insert Arrangement	28-51	28-59	28-66	28-72
Service Rating	A	A	A	-
Number of Contacts	12	7 10	2 14	3
Contact Size	12	12 16	8 12	4 (Coax) RG-59A/U or RG-62A/U
				
Insert Arrangement	28-74	28-75	28-79	28-82
Service Rating	A	A	A	D
Number of Contacts	9* 4* 3*	9* 7*	7 9	2 4
Contact Size	16 8 8 for #10 wire (S, T, R)	16 8 for #10 wire	8 16	8 12
				
Insert Arrangement	28-84	32-52	32-53	32-56
Service Rating	A	D	t, u = E; Bal. = Inst.	A
Number of Contacts	9	6 2	5 37	24 6
Contact Size	8	12 0	12 16	16 12 for #10 wire

*Solderless



QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

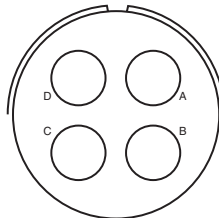


32-57

**

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

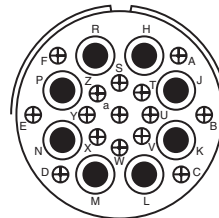
6 2
12 0 (Coax) RG-71/U



32-58

-

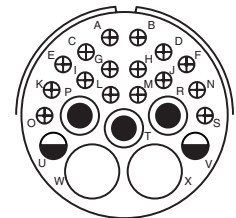
4 (Coax) RG-161U
or RG-179/U



32-60

A

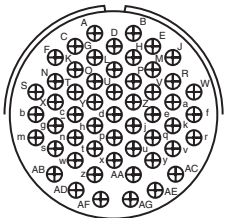
15 8
16 8 (Coax) RG-124/U



32-62

**

2 1 2 16 2
4 8 12 16 8 (Coax)RG-124/U

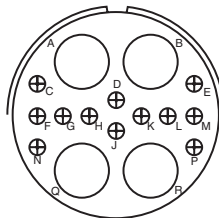


32-64

Inst.

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

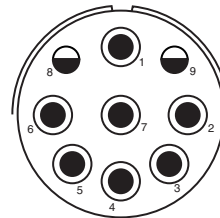
54
16



32-68

A

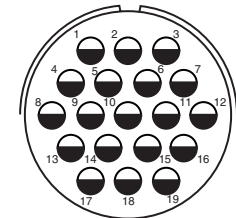
12 4
16 4 (Coax) RG-58C/U



32-75

8, 9 = D

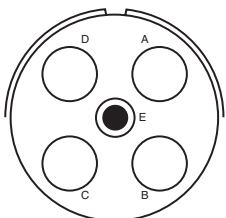
2 7
12 8 (Coax) RG-180B/U



32-76

A

19
12

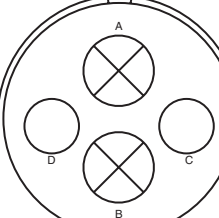


32-79

D

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

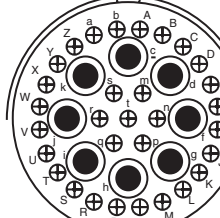
4 1
4 8



36-51

D

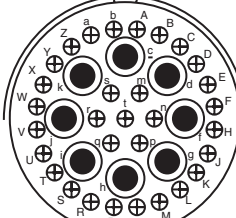
2 2
0 4



36-54

A

8 31
8 16



36-55

A

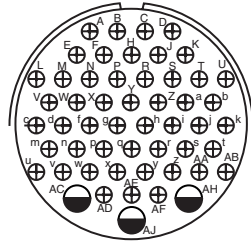
31 8
16 8 for #6 wire

**Consult Sidney, NY for service rating of power contacts.



QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

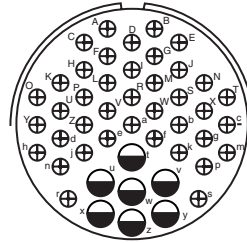


36-59

A

50 3

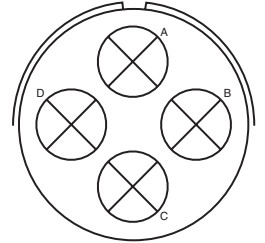
16 12 for #10 wire



36-60

40 7

16 12 for #10 wire



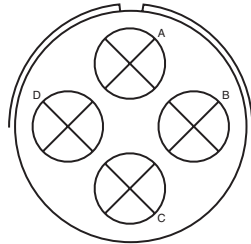
36-64

-

4

**0 (Coax) RG-11/U
RG-12/U or RG-13/U**

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

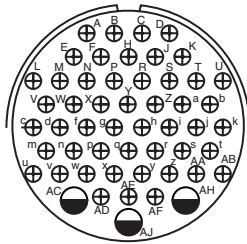


36-65

-

4

**0 (Coax) RG-59/U, RG-62/U
or RG-71/U**

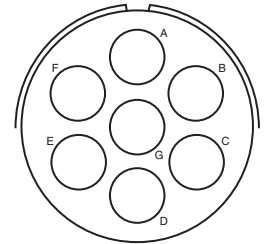


36-71

A

3 50

12 16



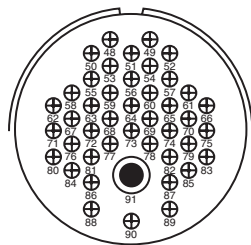
36-73

-

7

4 (Coax) RG-62B/U

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

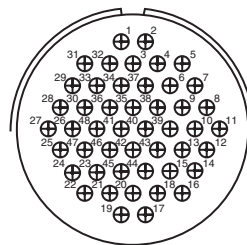


36-74

A

43 1

16 8 (Coax) RG-187/U

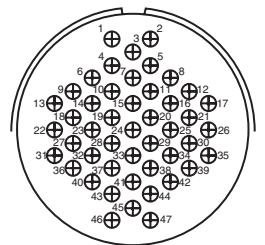


36-75

A

48

16 for #14 wire



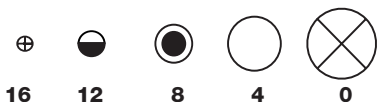
36-76

A

47

16

Insert Arrangement
Service Rating
Number of Contacts
Contact Size



CONTACT LEGEND

16

12

8

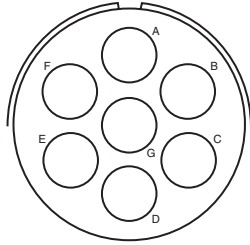
4

0

**Consult Sidney, NY for service rating of power contacts.

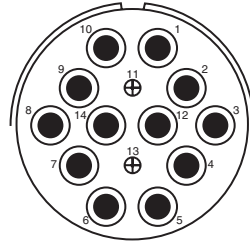
QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

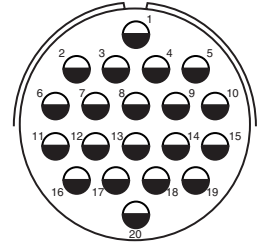


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

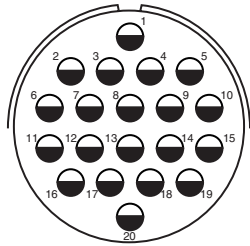
36-77
D
7
4



36-78
A
2 12
16 8

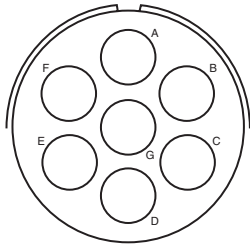


36-79
A
20
12

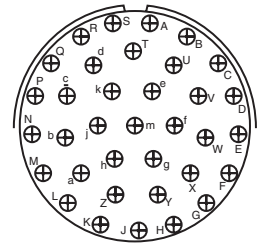


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

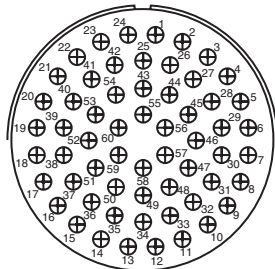
36-80
A
20
12 for #10 wire



36-83
-
7
4 (Coax) RG-58/U

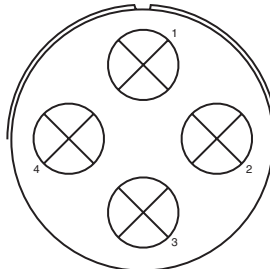


36-85
M = D; Bal. = A
35
16 for #12 wire

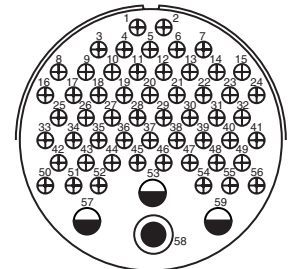


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

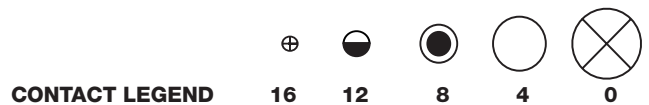
40-53
A
60
16



40-57
E
4
0

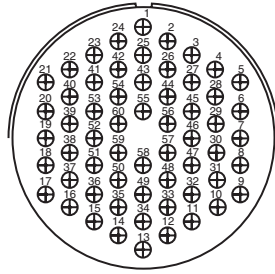


40-61
A
1 3 55
8 12 16

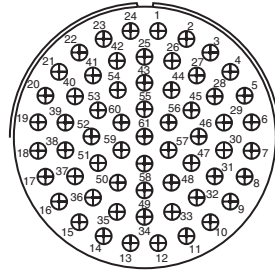


QWLD special arrangements

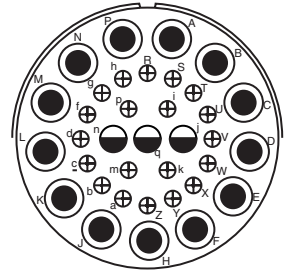
front face of pin insert or rear of socket insert illustrated



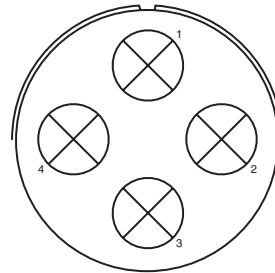
40-62
A
60
16



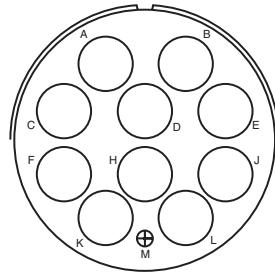
40-63
A
61
16 for #14 wire



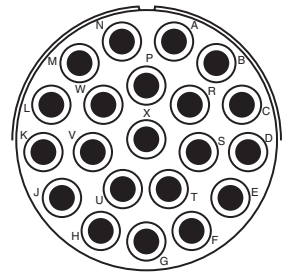
40-64
-
3 20 13
12 16 8 (Coax) RG-124/U



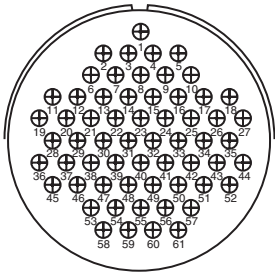
40-66
-
4
0 (Coax) RG-63B/U



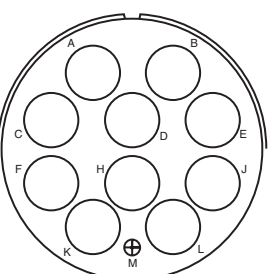
40-67
A
1 10
16 4 (Coax) RG-59/U



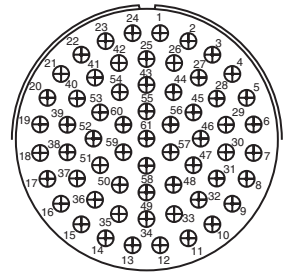
40-68
A
21
8



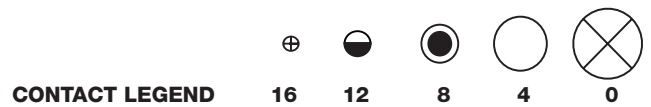
40-70
A
61
16



40-72
A
1 10
16 4 (Coax) RG-9B/U

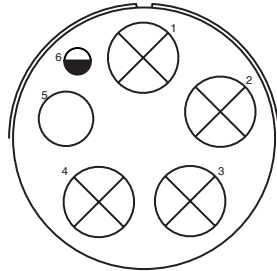


40-73
A
61
16



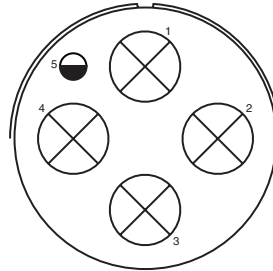
QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

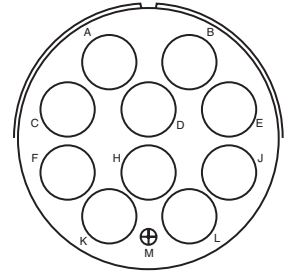


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

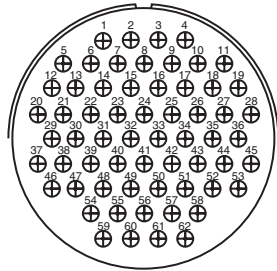
40-74
A
1 1 4
12 4 (Coax) RG-62/U 0 (Coax) RG-9B/U
or RG-214/U



40-75
E
1 4
12 0

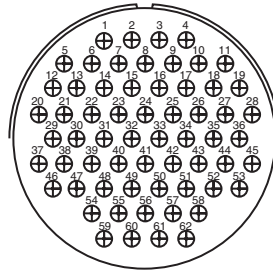


40-80
A
1 10
16 4

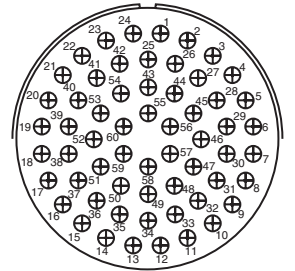


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

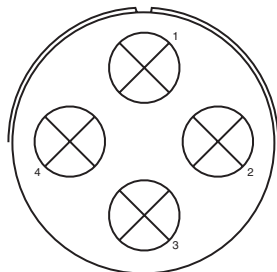
40-81
A
62
16 for #14 wire



40-82
A
62
16

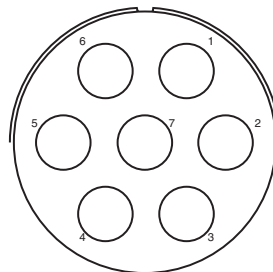


40-85
A
60
16 for #14 wire

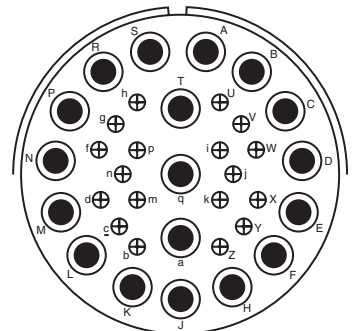


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

40-86
-
4
0 (Coax) RG-115A/U



40-87
D
7
4

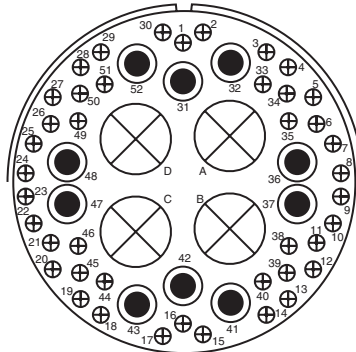


44-53
A
18 18
16 8 (Coax) RG-124/U



QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

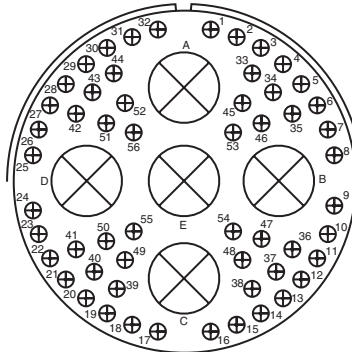


48-51†

A

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

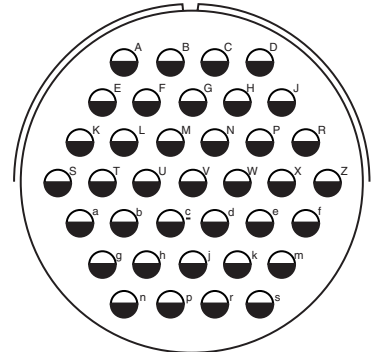
42 10 4
16 8 0 (Coax) RG-41/U



48-52†

A

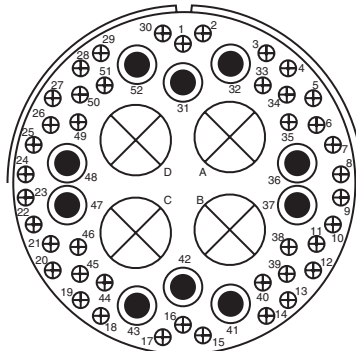
56 5
16 0 (Coax) RG-41/U



48-53†

D

37
12

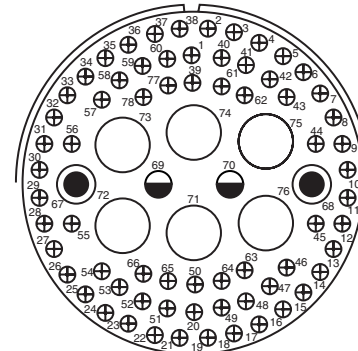


48-54†

A

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

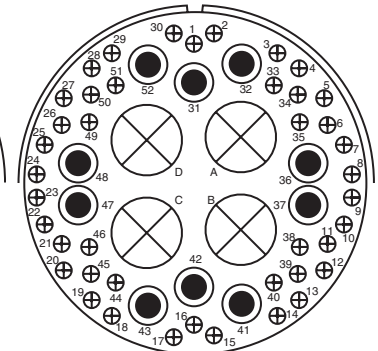
42 10 4
16 8 0 (Coax) RG-59/U



48-55†

A

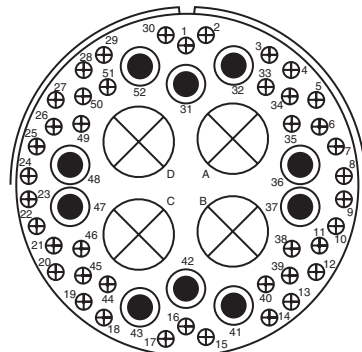
68 2 2 6
16 12 8 4



48-57†

A

42 10 4
16 8 0



48-60†

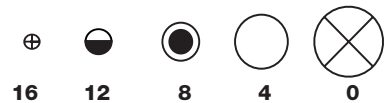
A

Insert Arrangement
Service Rating
Number of Contacts
Contact Size

42 10 4
16 8 0 (Coax) RG-214/U

†Consult Sidney, NY for availability

CONTACT LEGEND



QWLD

thermocouple contact availability

A complete line of cylindrical connectors containing thermocouple insert arrangements is available. The contact layout for a particular arrangement will be found in either the MIL-C-22992, QWLD contact arrangement section, pages 27-38, or the Special contact arrangement section, pages 39-47. All thermocouple contact layouts may contain either iron, alumel, chromel, constantan, standard (copper) or brass (dummy) contacts. See the thermocouple tabulations on the following pages.

The following abbreviations are used in the contact material column in the charts that follow. Also, thermocouple contacts are color coded as shown. (This identification is made by means of small dots of stain on solder well end of the contact.)

Abbreviation	Material	Color Code
Ir.	Iron	Black
Con	Constantan	Yellow
Cu.	Copper Alloy	N/A
Ch.	Chromel	White
Al.	Alumel	Green
Dummy	Brass	N/A

WIRE WELL DATA

Contact Size	Well Inside Dia. + .004 - .002	Well Depth + .031 - .000	Solder Well Barrel Outside Dia.
12	.125	.250	.166 ±.003
16	.094	.188	.125 +.002 -.004

RECOMMENDED WIRE

I Chromel-Alumel	Use wire in accordance with MIL-W-5848
II Iron-Constantan	Use wire in accordance with MIL-W-5845

QWLD

thermocouple arrangements

Shell Size and Arrg.	Similar to MS Arrg.	Total Contacts	Contact Size		Pin Insert Rotation CW	Contact Material
			12	16		
14-59	14-53	6		6	None	A = Al.; B = Ch.; C = Ir.; D = Con.; E,F = Cu.
16-52	16-11	2	2		90°	A = Al.; B = Ch.
16-53	16-9	4	2	2	70°	A = Al.; C = Ch.; B, D = Cu.
16-55	16-10	3	3		45°	A = Al.; B = Ch.; C = Cu.
16-56	16-13	2	2		90°	A = Con.; B = Cu.
16-57	16-10	3	3		None	A = Al.; B = Cu.; C = Ch.
16-58	16-10	3	3		None	A = Con.; B, C = Cu.
16-60	16-13	2	2		None	A = Al.; B = Ch.
16-62	16-11	2	2		None	A = Con.; B = Cu.
16-67	16-11	2	2		None	A = Al.; B = Ch.
16-68	16-9	4	2	2	None	A, B, C = Ch.; D = Al.
18-51	18-12	6		6	None	A = Ir.; B, E = Con.; D = Cu.; C, F = Dummy
18-52	18-11	5	5		None	A = Ir.; B = Con.; C = Ch.; D = Al.; E = Dummy
18-53	18-12	6		6	None	A, D = Ir.; B, E = Con.; C, F = Dummy
18-54	18-15	4	4		None	A, C = Al.; B, D = Ch.
18-56	18-1	10		10	45°	A, C, E, G, I = Ir.; B, D, F, H, J = Con
18-57	18-12	6		6	45°	A, C, E = Al.; B, D, F = Ch.
18-59	18-12	6		6	45°	A, C = Ir.; B, E, F = Con.; D = Cu.
18-60	18-11	5	5		45°	A, D = Al.; B, C = Ch.; E = Al.
18-61	18-12	6		6	None	A, C = Ir.; B, D = Con.; E = Ch.; F = Al.
18-62	18-12	6		6	None	A, B, D = Ir.; D, E, F = Con.
18-63	18-15	4	4		None	A, C = Con.; B, D = Cu.
18-65	18-12	6		6	None	A = Ir.; B = Con.; Balance = Cu.
18-66	18-1	10		10	None	A, C, E, G, I = Cu.; B, D, F, H, J = Con.
18-67	18-12	6		6	None	A, C, E = Cu.; B, D, F = Con.
18-68	18-11	5	5		None	A, D = Al.; B, C = Ch.; E = Cu.
18-69	18-1	10		10	None	A = Al.; B = Ch.; Balance = Cu.
18-70	18-11	5	5		None	A = Ir.; B = Con.; C = Ch.; D = Al.; E = Cu.
18-71	18-15	4	4		None	A = Con.; Balance = Cu.
18-72	18-15	4	4		None	D = Con.; Balance = Cu.
18-73	18-9	7	2	5	None	A = Al.; D = Ch; Balance = Cu.
18-74	18-12	6		6	None	A = Ch.; B = Al.; D = Ir.; E = Cu.; C, F = Con.
18-76	18-1	10		10	None	A, C, E, G, I = Al.; B, D, F, H, J = Ch.
18-77	18-1	10		10	None	A, C, E, G = Al.; B, D, F, H = Ch.; Bal. = Cu.
18-78	18-1	10		10	None	A = Al.; B = Ch.; D, F, H, J = Con.; Bal. = Cu.
18-79	18-12	6		6	None	A, F = Ir.; B, E = Con.; C, D = Cu.
18-80	18-15	4	4		None	A, C = Cu.; B, D = Con.
18-81	18-1	10		10	None	E, G = Con.; Bal. = Cu.
18-82	18-1	10		10	None	E, G = Con.; F, H = Ir.; Bal = Cu.
20-52	20-4	4	4		315°	A= Ir.; B = Con.; C = Ch.; D = Al
20-56	20-7	8		8	45°	A, B, G, H = Ir.; C, D, E, F = Con.
20-60	20-7	8		8	45°	D = Ch.; E = Al.; Balance = Cu.
20-61	20-29	17		17	45°	A, B, M = Cu.; Balance = Con.
20-62	20-15	7	7		80°	A, C, E, = Al.; B, D, F, = Ch.; G = Cu.

QWLD

thermocouple arrangements

Shell Size and Arrg.	Similar to MS Arrg.	Total Contacts	Contact Size		Pin Insert Rotation CW	Contact Material
			12	16		
20-64	20-27	14		14	None	A = Al.; C = Ch.; Balance = Cu.
20-65	20-27	14		14	None	A, B, C, D, E, F, G = Ir.; H, I, J, K, L, M, N = Con.
20-67	20-16	9	2	7	None	H = Al.; I = Ch.; Balance = Cu.
20-68	20-7	8		8	None	A, B, G, H = Con.; C, D, E, F = Cu.
20-69	20-27	14		14	None	A, B, C, D, E, F, G = Cu.; H, I, J, K, L, M, N = Con.
20-70	20-29	17		17	None	A, C, E, G, J, L, N, R, T = Ir.; B, D, F, H, K, M, P, S = Con.
20-71	20-29	17		17	None	S = Al.; R = Ch.; Balance = Cu.
20-74	20-29	17		17	None	A, C, E, G, J, L, N, R = Ir.; B, D, F, H, K, M, P, S = Con.; T = Cu.
20-75	20-15	7	7		None	G = Al.; Balance = Ch.
20-77	20-16	9	2	7	None	A = Con.; Balance = Std.
20-80	20-27	14		14	None	A, C, E, G, I, K, M = Cu.; B, D, F, H, J, L, N = Con.
20-81	20-27	14		14	None	A, C, E, G, I, K, M = Ch.; B, D, F, H, J, L, N = Al
20-82	20-29	17		17	None	A, C, E, G, J, L, N, R = Al.; B, D, F, H, K, M, P, S = Ch.; T = Cu.
20-85	20-33	11		11	None	K, L = Al.; Bal. = Ch.
20-87	20-29	17		17	None	A, C, E, G, J, L, N, R = Con.; Bal. = Cu.
20-88	20-27	14		14	None	A, C, E = Al.; B, D, F = Ch.; G, H, K, N = Con.; Bal. = Cu.
20-89	20-27	14		14	None	B, D, F, H, J, L = Al.; A, C, E, G, I, K = Ch., M, N = Cu.
20-90	20-27	14		14	None	C, G, I = Ch.; K, L, M = Al.; Bal. = Cu.
20-91	20-27	14		14	None	I = Ch.; K = Al.; Bal. = Cu.
20-92	20-7	8		8	None	A = Al.; H = Cu.; Bal. = Ch.
20-93	20-27	14		14	None	A = Ch.; B = Al.; Bal. = Cu.
20-94	20-15	7	7		None	A, C, E = Al.; B, D, F = Ch.; G = Cu.
20-99	20-33	11		11	None	A = Al.; Bal. = Ch.
22-57	22-14	19		19	45°	A, C, E, G, J, L, N, R = Ir.; B, D, F, H, K, M, P, S = Con.; T, U, V = Cu.
22-60	22-14	19		19	45°	U = Al.; N = Ch.; Bal. = Cu.
22-62	22-23	8	8		60°	A, B, F, G = Al.; C, D, E, H = Ch.
22-68	22-19	14		14	45°	A, C, E, G, J, L, M = Ir.; B, D, F, H, K, P, N = Con.
22-69	22-19	14		14	45°	A, C, E, G, J, L, M = Cu.; B, D, F, H, K, P, N = Con.
22-71	22-14	19		19	None	V = Al.; U = Ch.; Balance = Cu.
22-72	22-5	6	2	4	None	B = Al.; E = Ch.; Balance = Cu.
22-73	22-5	6	2	4	None	E = Al.; B = Ch.; Balance = Cu.
22-74	22-23	8	8		None	A, C, E, G = Ir.; B, D, F, H = Con.
22-75	22-23	8	8		None	A = Al.; B, D, G, H = Cu.; C = Ch.; E = Ir.; F = Con
22-76		21		21	None	W = Con.; Balance = Cu.
22-77	22-19	14		14	None	B, D, F, H, J, K, M, P = Cu.; A, E, L = Ir.; C, G, N = Con.
22-78	22-14	19		19	None	A, C, E, G, H, K, M, P, R, T = Con.; Balance = Cu.
22-79	22-10	4		4	None	A, C = Con.; B, D = Cu.
22-82	22-14	19		19	None	A, C, E, G, J, L, N, R, T = Ir.; B, D, F, H, K, M, P, S, U = Con.; V = Cu.
22-83	22-18	8		8	None	A, C, E, G = Al.; B, D, F, H = Ch.
22-84	22-14	19		19	None	A, C, S = Ch.; B, D, T = Al.; Bal. = Cu.
22-85	22-19	14		14	None	A, C, E, G, J, L, N = Al.; B, D, F, H, K, M, P = Ch.
22-89	22-88	7	7		None	A, C, E = Ir.; B, D, F = Con.; G = Cu.
24-56	24-20	11	2	9	45°	E = Al.; F = Ch.; Balance = Cu.
24-57	24-26	24		24	45°	A, C, J, V, Y, W, K, E, H, U, S, M = Ch.; Balance = Al
24-62	24-28	24		24	None	A, C, E, G = Ir.; B, D, F, H = Con.; R, T = Ch.; S, U = Al.; Balance = Cu.

QWLD

thermocouple arrangements

Shell Size and Arrg.	Similar to MS Arrg.	Total Contacts	Contact Size		Pin Insert Rotation CW	Contact Material
			12	16		
24-63	24-28	24		24	None	A, C, E, G, J, L, K, N, S, U, W, Y = Cu.; B, D, F, H, Q, R, M, P, T, V, X, Z = Con.
24-64	24-5	16		16	None	A, B, C, D, E, F, G, H = Ir.; J, K, L, M, N, P, R, S = Con.
24-68	24-28	24		24	None	D = Con.; Balance = Cu.
24-81	24-7	16	2	14	None	A, C, E, G, I, K, M, N, P = Cu.; B, D, F, H, J, L, O = Con.
24-88	24-28	24		24	None	A, B, C, D, E, F, G, H, J, K, L, M = Con.; Bal. = Ir.
24-91	24-5	16		16	None	A, B, C, D, E, F, G, H = Al.; J, K, L, M, N, P, R, S = Ch.
28-53	28-11	22	4	18	45°	J, L = Al.; K, M = Ch.; Balance = Cu.
28-58	28-20	14	10	4	45°	A, C, E, G, K, M = Al.; B, D, F, H, L, N = Ch.; J, P = Cu.
28-61	28-21	37		37	45°	A, C, J, Z, m, r, n, a, K, F, H, X, k, h, T, M, N, d = Ir.; Balance = Con.
28-63	28-20	14	10	4	45°	A, C, E, G, J = Al.; B, D, F, H, P = Ch.; Balance = Cu.
28-64	28-15	35		35	None	A, d = Al.; B, j = Ch.; C, D, E, F, G, N, P, R, S, H, J, K, L, M, W, X, Y, Z = Con.; Balance = Cu.
28-65	28-12	26		26	None	A, C, E, G, J, L, N, R, T, V = Ir.; X, Z = Al.; B, D, F, H, K, M, P, S, U, W = Con.; Y, a = Ch.; b, d = Cu.
28-67	28-16	20		20	None	U = Con.; Balance = Cu.
28-68	28-15	35		35	45°	T = Al.; U = Ch.; Balance = Cu.
28-69	28-11	22	4	18	None	G = Al.; R = Ch.; Balance = Cu.
28-70	28-11	22	4	18	None	A = Al.; B = Ch.; Balance = Cu.
28-77	28-11	22	4	18	None	J = Con.; Balance = Cu.
28-81	28-21	37		37	None	A, D, S, Z, n, s = Ir.; B, J, K, f, g, r = Con.; G, L, P, b, e, j = Al.; F, H, T, X, h, k = Ch.; Balance = Cu.
28-85	28-11	22	4	18	45°	K, M = Al.; J, L = Ch.; Bal. = Cu.
28-91	28-9	12	6	6	None	M = Ir.; L = Con.; Bal. = Cu.
28-94	28-12	26		26	None	B, D, F, H, K, M, P, S, U, W, Y, a, d = Al.; Bal. = Ch.
28-98	28-21	37		37	None	M = Al.; F = Ch.; Bal. = Cu.
28-99	28-12	26		26	None	B, D, F, H, K, M, P, S, U, W, Y, a = Con.; Bal. = Cu.
28-AC	28-16	20		20	None	A, C, E, G, J, L = Ir.; B, D, F, N, K, M = Con.; Bal. = Cu.
28-AD	28-21	37		37	45°	A, C, F, H, J, K, M, N, T, X, Z, a, d, h, k, m, n, r = Cu.; Bal. = Cu.
28-AE	28-21	37		37	None	A, C, E, G, J, L, N, R, T, V, X, a, c, e, g, j, m, p, s = Cu.; Bal. = Con.
28-AF	28-18	12		12	None	A, C, E, G, J, L = Ch.; Bal. = Al.
28-AG	28-12	26		26	None	A, C, E, G, J, L, N, R = Al.; B, D, F, H, K, M, P, S = Ch.; Bal. = Cu.
28-AK	28-21	37		37	45°	A, B, C, D, J, K, L, M, N, P, a, b, c, d, e, m, p = Ch.; n = Cu.; Bal. = Al.
32-51	32-8	30	6	24	90°	M = Ch.; N = Al.; Balance = Cu.
32-55	32-8	30	6	24	125°	M, N = Ch.; O, P = Al.; Balance = Cu.
32-91	32-64	54		54	None	A, C, E, G, J, L, N, P, S, U, W, Y, a, c, e, g, j, m = Ir.; B, D, F, H, K, M, O, R, T, V, X, Z, b, d, f, h, k, n = Con.; Bal. = Cu.
36-53	36-7	47	7	40	45°	u, v, w = Al.; x, y, z = Ch.; Balance = Cu.
36-56	36-10	48		48	None	A, C, E, G, L, J, H, P, R, T, V, X, Z, b, d, f, h, k, q, n, m, u, w, y = Con.; Bal. = Cu.
36-57	36-8	47	1	46	None	W = Al.; f = Ch.; Balance = Cu.
36-58	36-15	35		35	None	H = Al.; G = Ch.; Balance = Cu.
36-61	36-15	35		35	None	A, C, E, J, K, L, M, N, P, R, T, V, f, X, Y, h, j, c = Con.; Balance = Cu.
36-62	36-10	48		48	None	A, C, E = Al.; B, D, F = Ch.; Balance = Cu.
36-82	36-52*	52		52	None	v, g = Ir.; p, y, c = Con.; x = Ch.; Balance = Cu.

* Amphenol arrangement

QWLD

thermocouple arrangements

Shell Size and Arrg.	Similar to MS Arrg.	Total Contacts	Contact Size		Pin Insert Rotation CW	Contact Material
			12	16		
36-86	36-10	48		48	None	A, C, E, G, J, L, N, P, R, T, V, X = Al.; B, D, F, H, K, M, O, Q, S, U, W, Y = Ch.; z, b, d, f, h, k, n, q, s, u, w, y = Con.; a, c, e, g, j, m, p, r, t, v, x, z = Cu.
36-88	36-52	52		52	None	A, C, E, H, K, M, P, S, U, W, Y, a, c, f, h, j, m, p, r, t, v, x, z, AB, AD, AF = Cu.; Bal. = Con.
40-58	40-56*	85		85	None	A, C, E, H, K, M, P, S, U, W, Y, a, c, f, h, j, m, p, r, t, v, x, z, AB, AD, AF, AJ, AL, AN, AP, AS, AU, AW, AY, BA, BC, BE, BH, BK, BM, BP, BS, BU = Ir.; Balance = Con.
40-59	40-56*	85		85	None	B = Ch.; C = Con.; Balance = Cu.
40-77	40-53*	60		60	None	55, 60 = Ir.; 57, 58, 59 = Con.; 56 = Ch.; Balance = Cu.
40-78	40-53*	60		60	None	50, 51 = Ir.; 27, 28, 29, 31, 32, 34, 36, 37 = Con.; 25, 39, 40, 41 = Al.; 43, 44, 45, 46, 47, 48, 49, 52, 53, 54 = Ch.; Balance = Cu.
40-88	40-53	60		60	None	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59 = Con.; Bal. = Cu.
40-AA	40-56	85		85	None	A, C, E, H, K, M, P, S, U, W, Y, a, c, f, h, j, m, p, r, t, v, x, z, AB, AD, AF, AJ, AL, AN, AR, AT = Cu.; B, D, F, J, L, N, R, T, V, X, Z, b, d, g, i, k, n, q, s, u, w, y, AA, AC, AE, AH, AK, AM, AP, AS = Con.; AU, AW, AY, BA, BC, BE, BH, BK, BM, BP, BS, BU = Cu.; AV, AX, AZ, BB, BD, BF, BJ, BL, BN, BR, BT, BV = Al.
44-57	44-52	104		104	None	A, C, E, G, J, L, etc. = Cu.; B, D, F, H, K, M, etc. = Con.
44-59	44-52	104		104	None	34 = Con.; 70 = Cu.
44-60	44-52	104		104	None	A, C, E, etc. = Ch., (52); B, D, F, etc. = Al., (52)
44-62	44-52	104		104	None	BY, BZ, CA, CB, CC, CD, CE, CR = Al.; CH, CJ, CK, CL, CM, CN, CP, CS = Ch.; Bal. = Cu.

* Amphenol arrangement