



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



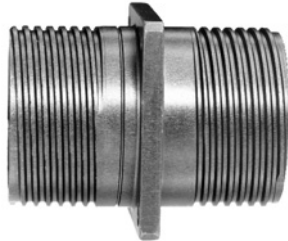
**Heavy Duty  
Cylindrical  
MIL-C-22992  
QWLD**

# Amphenol® Heavy Duty Cylindrical Connectors

## MIL-C-22992, QWLD



wall mount receptacle



thru bulkhead receptacle



cable connecting plug



straight plug



box mount receptacle



jam nut receptacle  
(box mount)



jam nut receptacle  
(wall mount)

Amphenol® QWLD Series heavy duty cylindrical connectors provide reliable power and control functions in hostile environments where ordinary connectors cannot survive.

**Design features of this connector series provide:**

- **High Durability** - water and explosion proof, resistant to abrasion, corrosion, vibration and shock
- **Quick, Positive Mating** - double stub threads per MIL-STD-1373 for fast coupling, easily cleaned
- **Selection** - over 300 industrial and MS-approved insert patterns available, including coaxial and thermocouple

On the drilling platform in the North Sea, pump and motor generator controls run smoothly, although constantly exposed to salt spray.

At Prudhoe Bay where the nights are six months long, portable lighting systems permit operation regardless of temperature plummeting to 50° below zero.

The circus ferris wheel runs continuously despite the fact that it has rained for five days and all power connections are lying in six inches of mud.

These situations are typical of the extreme conditions under which thousands of Amphenol QWLD connectors are operating daily. Outstanding design features that make these cylindricals a necessity for difficult applications include:

- Alumilite 225\* hard anodic finish for abrasion and corrosion resistance or conductive cadmium plate
- Resilient inserts for moisture sealing, positive proof against shock and vibration
- Sealing gaskets at every joint for water-proof assembly
- Cable strain relief provided by clamp bar type accessories
- Left hand accessory threads to prevent damage from disconnect torque applied in the wrong direction
- Closed entry socket contact design in solder or replaceable crimp contacts

\* Registered trademark of Aluminum Company of America

# MIL-C-22992, QWLD

## how to order

### MS-APPROVED CONNECTORS

To illustrate the ordering procedure, part number MS17343R20N27PW is shown as follows:

PART NUMBER						
<u>MS17343</u>	<u>R</u>	<u>20</u>	<u>N</u>	<u>27</u>	<u>P</u>	<u>W</u>
1	2	3	4	5	6	7

#### 1. MS Number -

- MS17343 designates wall mount receptacle
- MS17344 designates straight plug
- MS17345 designates cable connecting plug
- MS17346 designates box mount receptacle
- MS17347 designates jam nut receptacle with rear accessory threads (wall mount)
- MS17348 designates jam nut receptacle (box mount)

#### 2. Class -

- C designates pressurized - used where circuit integrity is protected by a pressure differential
- R designates environmental - see table, page 1

#### 3. Shell Size -

available in shell sizes 12 through 44. Refer to pages 53 through 59 for dimensional data.

#### 4. Shell Finish -

C for conductive or N for non-conductive

#### 5. Insert Arrangement -

current MS insert arrangements are shown in black in the QWLD insert arrangements section of this catalog. Only these arrangements are available in MS-approved connectors.

#### 6. Contact Type -

P for pin, S for socket

#### 7. Alternate Insert Rotation -

used to prevent cross-mating of connectors. Absence of a letter in this space indicates normal (0°) position of the insert. Refer to page 26 for alternate insert rotation illustrations.

### QWLD INDUSTRIAL VERSIONS

These heavy duty connectors are identical to MS-approved types except for the added flexibility of connector shell and contact type and finish options, plus added insert arrangements. To illustrate the ordering procedure, part number 10-194622-14S is shown as follows:

PART NUMBER					
10	-	194	6	22-14	S
<u>1</u>		<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

#### 1. Base Number Prefix -

- used to define connector shell finish and contact type and finish
- 10 - Solder type contacts, silver plated
- 75- Crimp type contacts, silver plated
- 81- Crimp type contacts, plated .0001 gold over silver
- 82- Crimp type contacts for MIL-C-13777 cable, silver plated
- 83- Crimp type contacts for MIL-C-13777 cable, plated .0001 gold over silver
- 85- Crimp type contacts, plated .00005 gold over silver
- All above prefix numbers utilize connector shells with Alumilite\* non-conductive finish*
- 88- Solder type contacts, silver plated. Connector shell utilizes olive drab cadmium plate over nickel conductive finish.

#### 2. Base Number -

QWLD Series Heavy Duty Cylindrical Connector

#### 3. Shell Style -

- 0 designates wall mount receptacle
- 1 designates cable connecting plug
- 2 designates box mount receptacle
- 3 designates jam nut receptacle with rear accessory threads (wall mount)
- 4 designates thru bulkhead receptacle
- 6 designates straight plug
- 9 designates jam nut receptacle (box mount)

#### 4. Shell Size/Insert Arrangement -

Amphenol® QWLD connectors are available in equivalent MS shell sizes with all current MS insert arrangements as well as a large selection of special arrangements for power and signal circuits. Select the required insert arrangement number from those shown in black (MS arrangements) or red (industrial arrangements).

#### 5. Contact Type/Alternate Insert Rotation -

P for pin, S for socket. When an alternate position of the connector insert is required to prevent cross-mating of connectors, a different letter (other than P or S) is used. Select from the table below the Amphenol® letter which indicates both type of contact and insert rotation desired. Refer to page 26 for alternate insert rotation illustrations.

Pin Contacts		Socket Contacts	
MS Letters	Amphenol® Letters	MS Letters	Amphenol® Letters
P	P (normal)	S	S (normal)
PW	G	SW	H
PX	I	SX	J
PY	K	SY	L
PZ	M	SZ	N

Alumilite is a registered trademark of Aluminum Co. of America

# 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

# MIL-C-22992, QWLD

## 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							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.

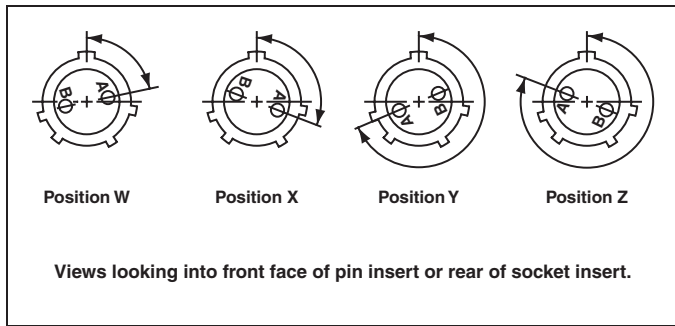
† Consult Sidney, NY for availability.

# 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



# MIL-C-22992, QWLD

## contact arrangements

front face of pin insert or rear of socket insert illustrated

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

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

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

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

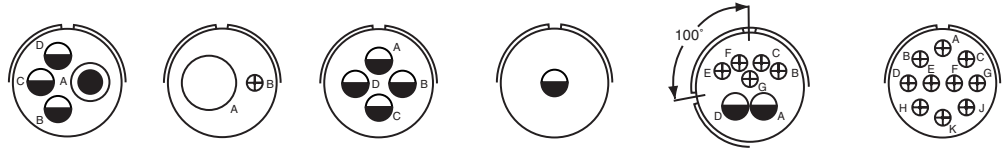
\*A = Iron; B = Constantan

**CONTACT LEGEND**

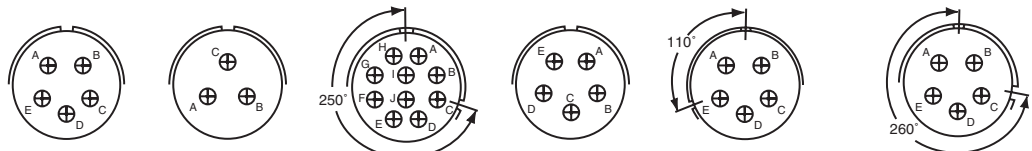
16	12	8	4	0	

# MIL-C-22992, QWLD contact arrangements

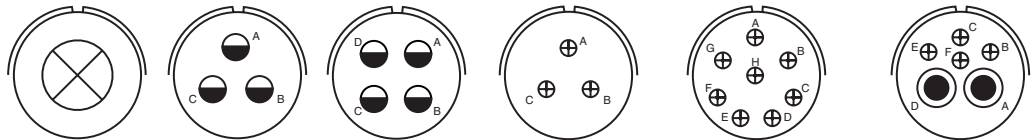
front face of pin insert or rear of socket insert illustrated



Insert Arrangement	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

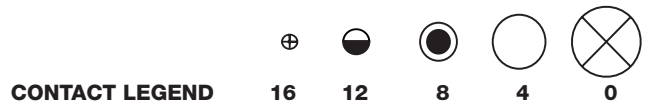


Insert Arrangement	18-20	18-22	18-24	18-29	18-30	18-31
Service Rating	A	D	B, C, F, G = A, Bal. = Inst.	A	A	A
Number of Contacts	5	3	10	5	5	5
Contact Size	16	16	16	16	16	16



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

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

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

			100° Rotation of 20-11			250° Rotation of 20-11
<b>Insert Arrangement</b>	20-23	20-24	20-25	20-27	20-29	20-30
<b>Service Rating</b>	A	A	Inst.	A	A	Inst.
<b>Number of Contacts</b>	2	2 2	13	14	17	13
<b>Contact Size</b>	8	8 16	16	16	16	16



# MIL-C-22992, QWLD

## contact arrangements

front face of pin insert or rear of socket insert illustrated

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

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

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

<b>CONTACT LEGEND</b>	<b>16</b>	<b>12</b>	<b>8</b>	<b>4</b>	<b>0</b>

# MIL-C-22992, QWLD

## contact arrangements

front face of pin insert or rear of socket insert illustrated

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

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

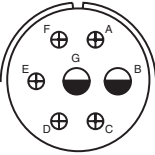
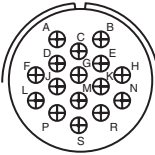
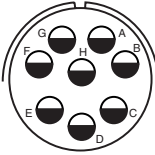
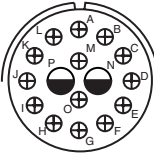
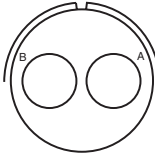
<b>Insert Arrangement</b>	<b>22-28</b>	<b>22-33</b>	<b>22-34</b>	<b>22-36</b>	<b>24-2</b>
<b>Service Rating</b>	A	A, B, C, D = D; E, F, G = A	D	H = D; Bal. = A	D
<b>Number of Contacts</b>	7	7	3 2	8	7
<b>Contact Size</b>	12	16	12 16	12	12

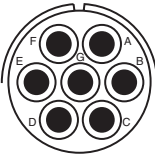
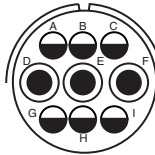
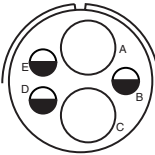
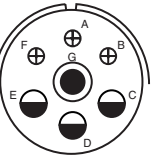
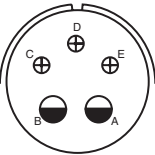


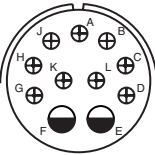
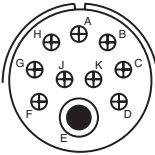
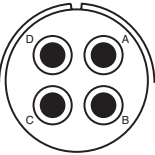
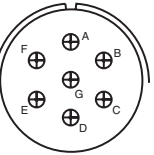
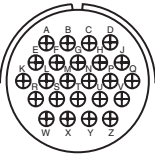
# MIL-C-22992, QWLD




## contact arrangements

front face of pin insert or rear of socket insert illustrated

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

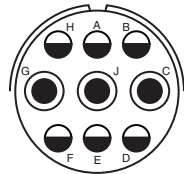
					
<b>Insert Arrangement</b>	24-10	24-11	24-12	24-16	24-17
<b>Service Rating</b>	A	A	A	A, B, F, G = D; C, D, E = A	D
<b>Number of Contacts</b>	7	3 6	2 3	1 3 3	2 3
<b>Contact Size</b>	8	8 12	4 12	8 12 16	12 16

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

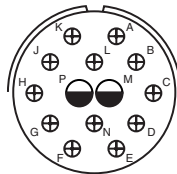
					
<b>CONTACT LEGEND</b>	16	12	8	4	0

# MIL-C-22992, QWLD contact arrangements

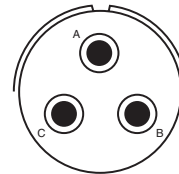
front face of pin insert or rear of socket insert illustrated



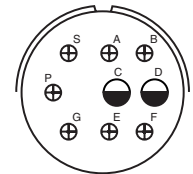
**28-1**  
A, J, E = D; Bal. = A  
3 6  
8 12



**28-2**  
D  
2 12  
12 16

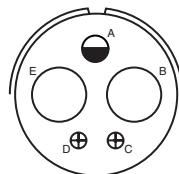


**28-3**  
E  
3  
8

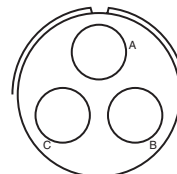


**28-4**  
G, P, S = E; Bal. = D  
2 7  
12 16

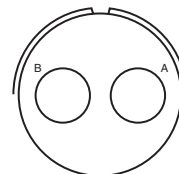
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**



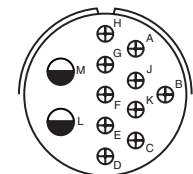
**28-5**  
D  
2 1 2  
4 12 16



**28-6**  
D  
3  
4

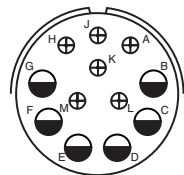


**28-7**  
D  
2  
4

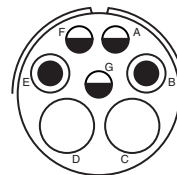


**28-8**  
L, M = E; B = D; Bal. = A  
2 10  
12 16

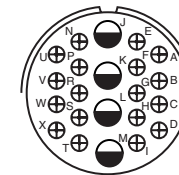
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**



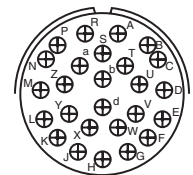
**28-9**  
D  
6 6  
12 16



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

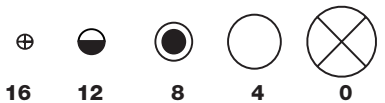


**28-11**  
A  
4 18  
12 16



**28-12**  
A  
26  
16

**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**



**CONTACT LEGEND**

16

12

8

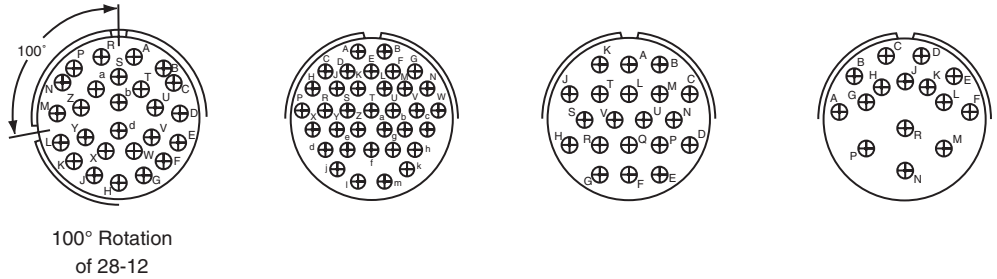
4

0

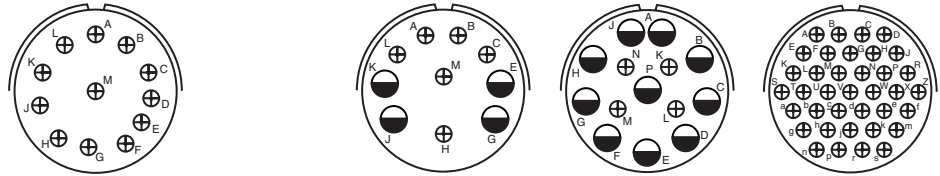
# MIL-C-22992, QWLD

## contact arrangements

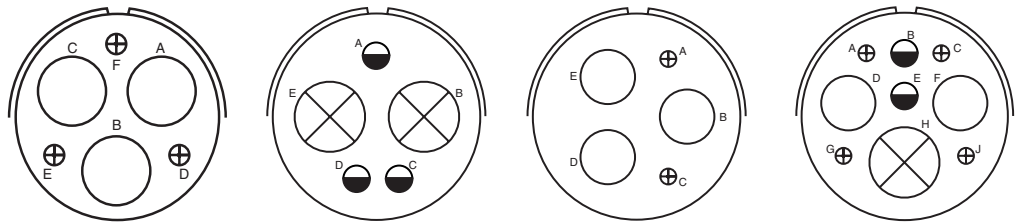
front face of pin insert or rear of socket insert illustrated



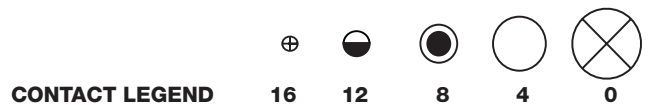
Insert Arrangement	28-13	28-15	28-16	28-17
Service Rating	A	A	A	R = B; M, N, P = D; A to L = A
Number of Contacts	26	35	20	15
Contact Size	16	16	16	16



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



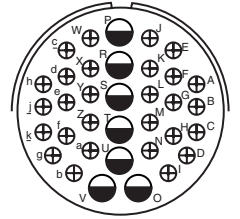
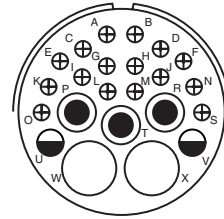
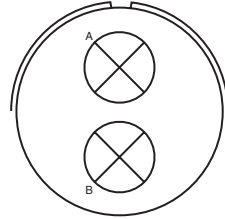
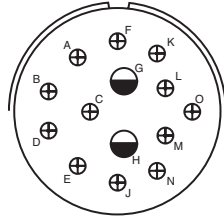
Insert Arrangement	28-22	32-1	32-2	32-3
Service Rating	D	A = E; Bal. = D	E	D
Number of Contacts	3 3	2 3	3 2	1 2 2 4
Contact Size	4 16	0 12	4 16	0 4 12 16





# MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated



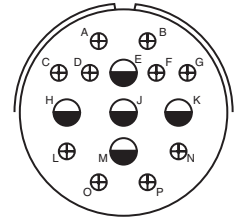
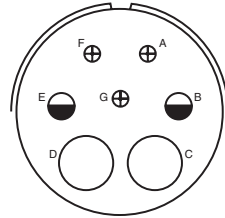
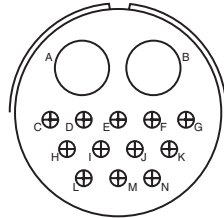
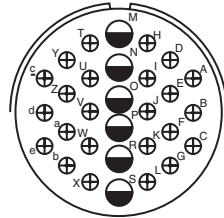
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

**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



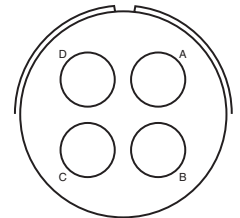
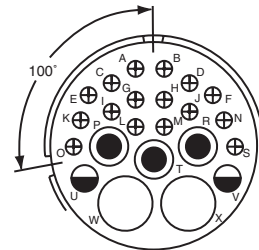
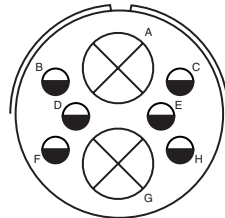
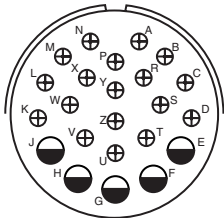
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

**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

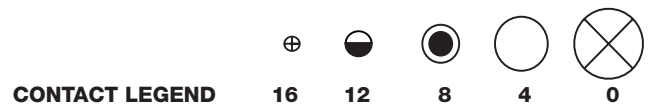
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

**32-13**  
D  
5 18  
12 16

**32-15**  
D  
2 6  
0 12

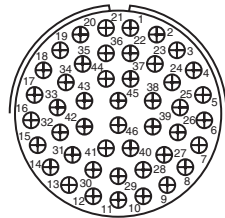
**32-16**  
A  
2 3 2 16  
4 8 12 16

**32-17**  
D  
4  
4



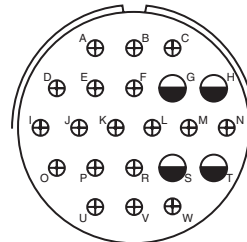
# MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated

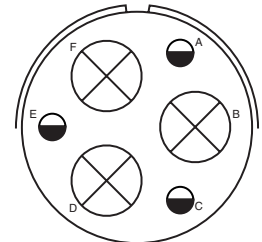


Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

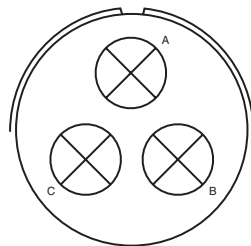
32-73  
A  
46  
16



36-1  
D  
4 18  
12 16

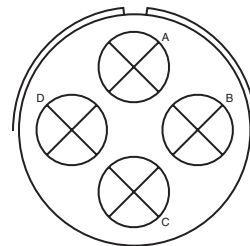


36-3  
D  
3 3  
0 12

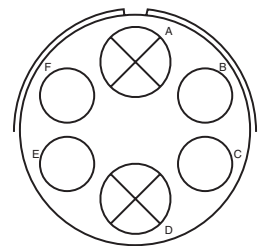


Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

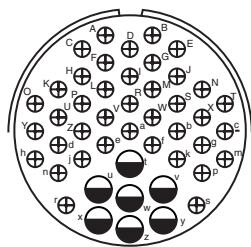
36-4  
A = D; B, C = A  
3  
0



36-5  
A  
4  
0

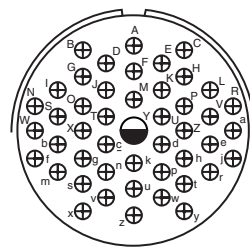


36-6  
A  
2 4  
0 4

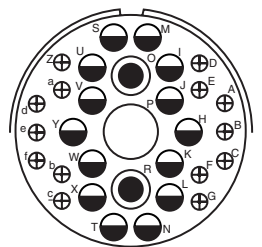


Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

36-7  
A  
7 40  
12 16

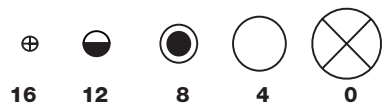


36-8  
A  
1 46  
12 16



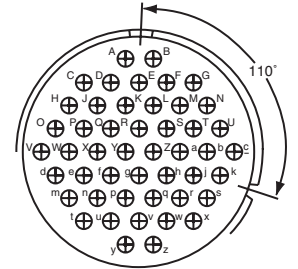
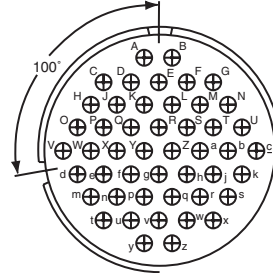
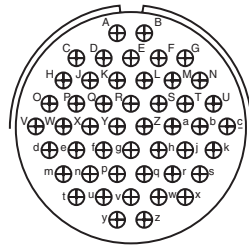
36-9  
A  
1 2 14 14  
4 8 12 16

CONTACT LEGEND



# MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated



Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

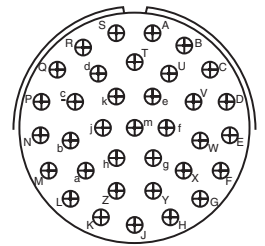
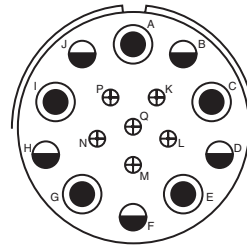
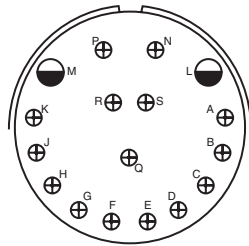
**36-10**  
**A**  
**48**  
**16**

100° Rotation  
of 36-10

**36-11**  
**A**  
**48**  
**16**

110° Rotation  
of 36-10

**36-12**  
**A**  
**48**  
**16**

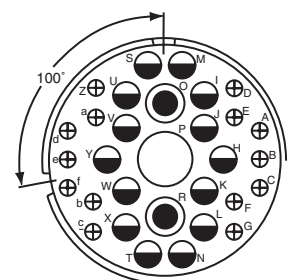
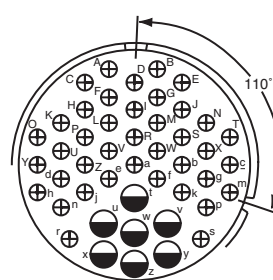
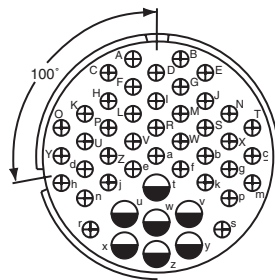


Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

**36-13**  
**N, P, Q = E; Bal. = A**  
**2 15**  
**12 16**

**36-14**  
**D**  
**5 5 6**  
**8 12 16**

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



Insert Arrangements  
Service Rating  
Number of CContacts  
Contact Size

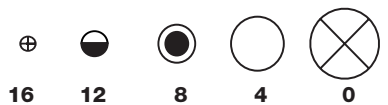
**36-16**  
**A**  
**7 40**  
**12 16**

110° 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**

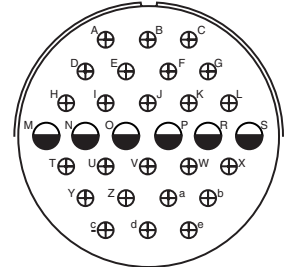
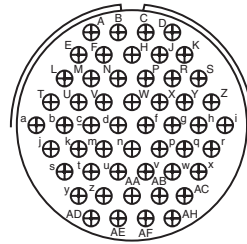
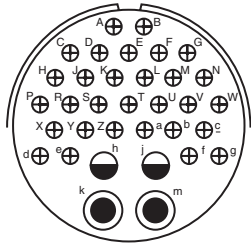
**8**

**4**

**0**

# MIL-C-22992, QWLD contact arrangements

front face of pin insert or rear of socket insert illustrated

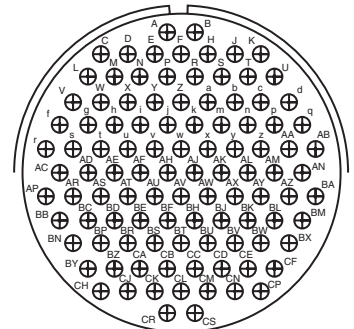
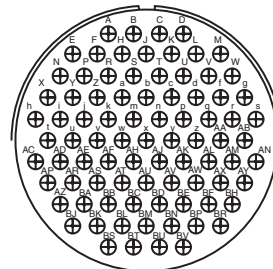
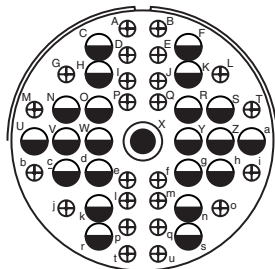


**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

**36-20**  
**A**  
**2 2 30**  
**8 12 16**

**36-52**  
**A**  
**52**  
**16**

**40-1**  
**D**  
**6 24**  
**12 16**



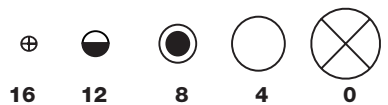
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

**40-9**  
**A**  
**1 22 24**  
**8 12 16**

**40-56**  
**A**  
**85**  
**16**

**44-52**  
**A**  
**104**  
**16**

**CONTACT LEGEND**





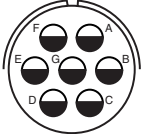
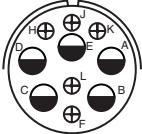

# QWLD

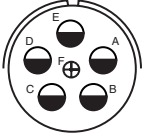
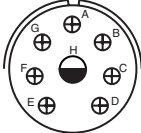
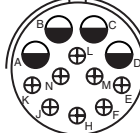
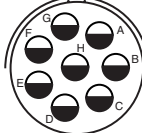
## special arrangements

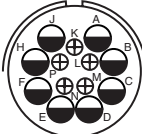
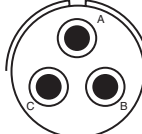
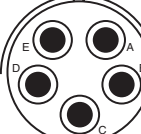

Ever expanding requirements for more complex circuits in ground equipment and elevated altitude applications has prompted Amphenol to provide inserts not covered by the MS drawings. Pictured here and on the following pages are insert layouts which have anywhere from one contact

(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

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

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

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

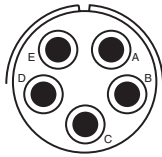
\*Solderless

					
<b>CONTACT LEGEND</b>	16	12	8	4	0

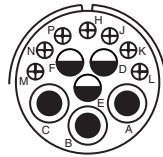
# QWLD

## special arrangements

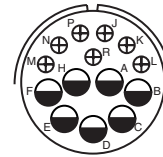
front face of pin insert or rear of socket insert illustrated



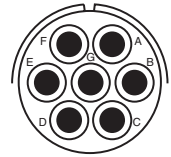
**24-53**  
**A**  
**5\***  
**8**



**24-58**  
**A**  
**3 3 7**  
**8 12 16**

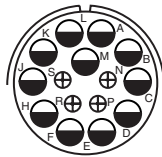


**24-59**  
**A**  
**7 7**  
**12 16**

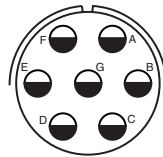


**24-60**  
**A**  
**7\***  
**8 for #10 or 12 wire**

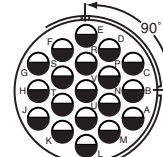
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**



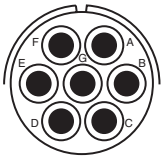
**24-65**  
**A**  
**11 4**  
**12 16**



**24-66**  
**D**  
**7**  
**12**

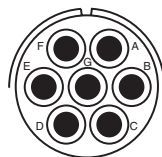


**24-67**  
**Inst.**  
**19**  
**12**

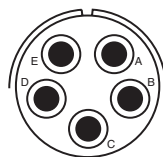


**24-71**  
**A**  
**2\* 5\***  
**8 8 for #10 or 12 wire**

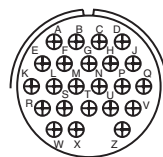
**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**



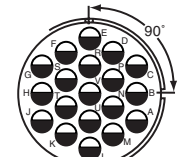
**24-75**  
**A**  
**5 2**  
**8 8 for #16 wire**



**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**

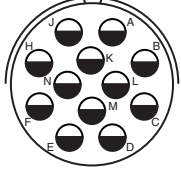
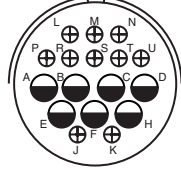
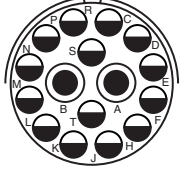
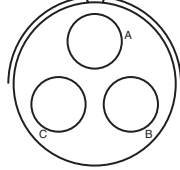

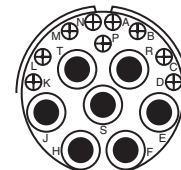

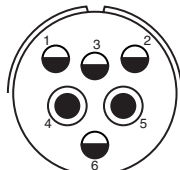
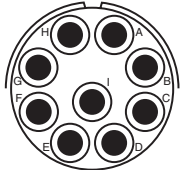
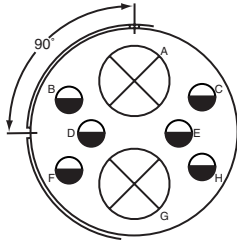
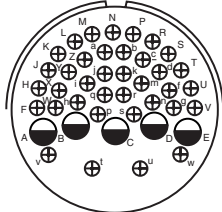
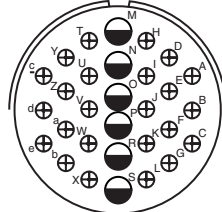
**0**

\*Solderless





# QWLD

## special arrangements

front face of pin insert or rear of socket insert illustrated

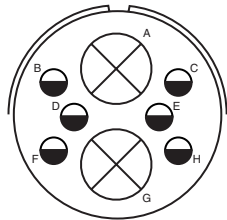
				
<b>Insert Arrangement</b>	<b>28-51</b>	<b>28-59</b>	<b>28-66</b>	<b>28-72</b>
<b>Service Rating</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>-</b>
<b>Number of Contacts</b>	<b>12</b>	<b>7 10</b>	<b>2 14</b>	<b>3</b>
<b>Contact Size</b>	<b>12</b>	<b>12 16</b>	<b>8 12</b>	<b>4 (Coax) RG-59A/U or RG-62A/U</b>
			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

\*Solderless

<b>CONTACT LEGEND</b>					
	<b>16</b>	<b>12</b>	<b>8</b>	<b>4</b>	<b>0</b>

# QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

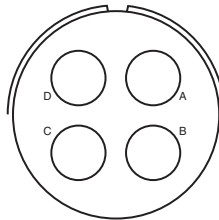


32-57

\*\*

6 2

12 0 (Coax) RG-71/U

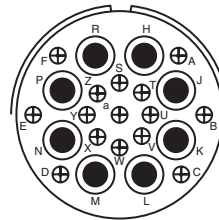


32-58

-

4

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

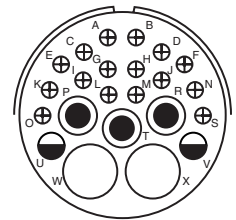


32-60

A

15 8

16 8 (Coax) RG-124/U



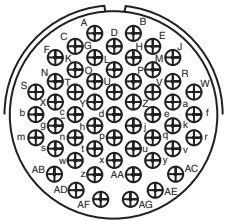
32-62

\*\*

2 1 2 16 2

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

Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

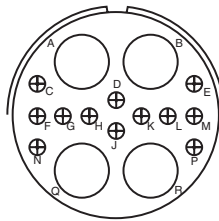


32-64

Inst.

54

16

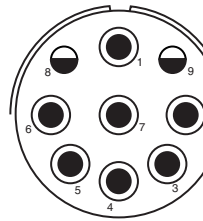


32-68

A

12 4

16 4 (Coax) RG-58C/U

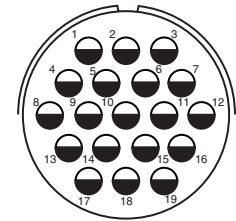


32-75

8, 9 = D

2 7

12 8 (Coax) RG-180B/U



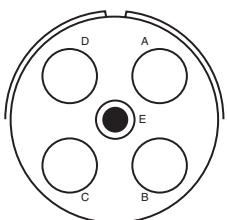
32-76

A

19

12

Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

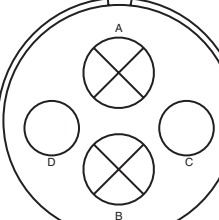


32-79

D

4 1

4 8

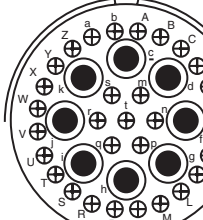


36-51

D

2 2

0 4

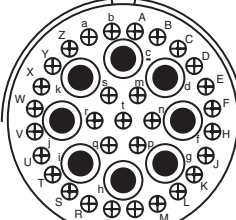


36-54

A

8 31

8 16



36-55

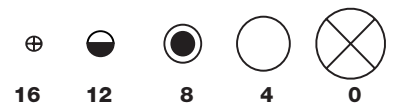
A

31 8

16 8 for #6 wire

Insert Arrangement  
Service Rating  
Number of Contacts  
Contact Size

CONTACT LEGEND

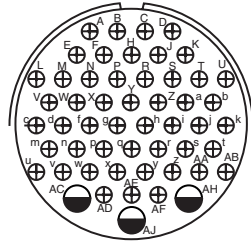


\*\*Consult Sidney, NY for service rating of power contacts.



# QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

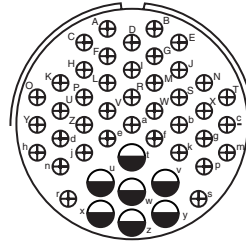


**36-59**

**A**

**50 3**

**16 12 for #10 wire**

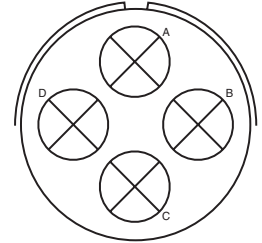


**36-60**

**\*\***

**40 7**

**16 12 for #10 wire**



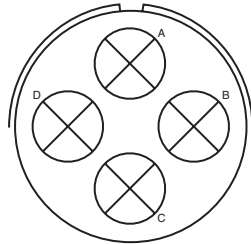
**36-64**

**-**

**4**

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

**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

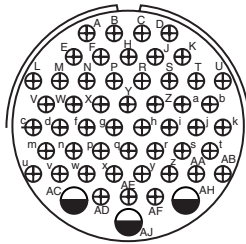


**36-65**

**-**

**4**

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

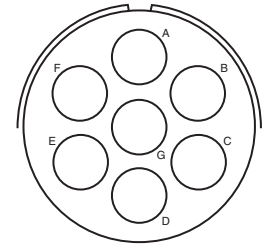


**36-71**

**A**

**3 50**

**12 16**



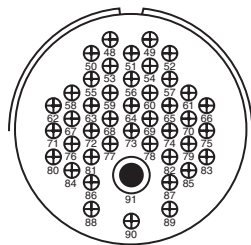
**36-73**

**-**

**7**

**4 (Coax) RG-62B/U**

**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

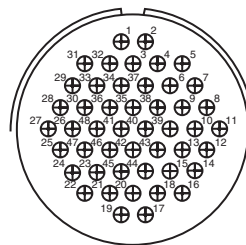


**36-74**

**A**

**43 1**

**16 8 (Coax) RG-187/U**

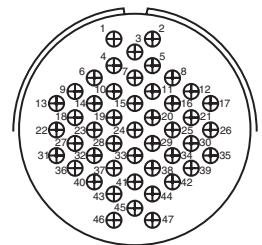


**36-75**

**A**

**48**

**16 for #14 wire**



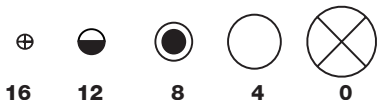
**36-76**

**A**

**47**

**16**

**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**



**CONTACT LEGEND**

**16**

**12**

**8**

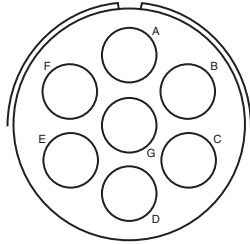
**4**

**0**

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

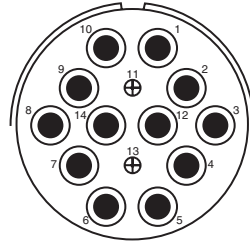
# QWLD special arrangements

front face of pin insert or rear of socket insert illustrated

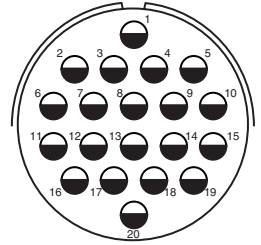


**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

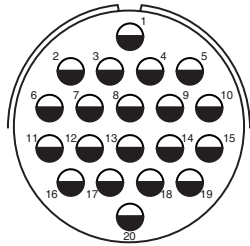
**36-77**  
**D**  
**7**  
**4**



**36-78**  
**A**  
**2 12**  
**16 8**

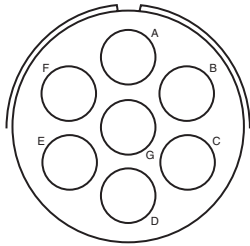


**36-79**  
**A**  
**20**  
**12**

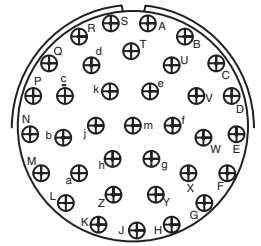


**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

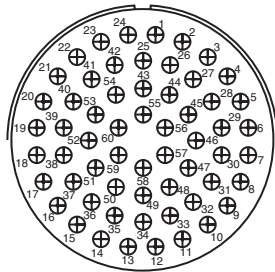
**36-80**  
**A**  
**20**  
**12 for #10 wire**



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

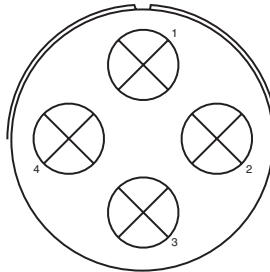


**36-85**  
**M = D; Bal. = A**  
**35**  
**16 for #12 wire**

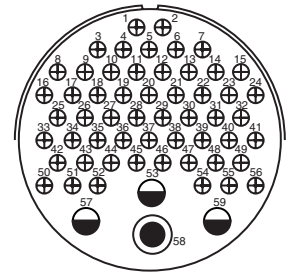


**Insert Arrangement**  
**Service Rating**  
**Number of Contacts**  
**Contact Size**

**40-53**  
**A**  
**60**  
**16**



**40-57**  
**E**  
**4**  
**0**



**40-61**  
**A**  
**1 3 55**  
**8 12 16**

