



AEROSPACE RECOMMENDED PRACTICE

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Superseding ARP1308C

(R) Electrical Connectors for Aerospace, Shipboard,
Ground Vehicles and Associated Equipment

RATIONALE

A revision is required to update connector details and reference information, to remove all MIL connector information and to include AS95234, AS29600, AS81582, AS81703, and AS85028 connector specifications.

1. SCOPE

The intent of this ARP is to identify electrical connectors maintained by the AE-8C1 Committee, to provide their general application characteristics, associated configuration options, and recommendations for new design (see 6.1.1), repair, and retrofit purposes (see 6.1). It is acknowledged the connectors listed herein will not completely satisfy all mobility vehicle and equipment requirements, but optimization of the use of these components will facilitate standardization in the form of maximum utilization of a minimum variety of connectors. This ARP only pertains to AS connector standards. See MIL-STD-1353 for U.S. military specification connector information.

1.1 Purpose

This SAE Aerospace Recommended Practice (ARP) serves as a guide concerning standard practice for the selection and use of electrical connectors for mobility vehicles and associated equipment.

1.2 Classification

Electrical connectors shall be classified in accordance with the connector geometric configuration, size (see 6.2) and coupling method or usage as follows:

- Class 1: Cylindrical, Standard, Threaded Coupling (AS50151)
- Class 2: Circular, Miniature, Quick Coupling, High Density, Composite (AS29600)
- Class 3: Circular, Umbilical, Bayonet Coupling (AS81582)
- Class 4: Rectangular, General Purpose (AS81659)
- Class 5: Circular, Miniature, Rack and Panel or Push-Pull Coupling (AS81703)
- Class 6: Rectangular, Polarized Center Jackscrew, General Purpose (AS85028)
- Class 7: Circular, High Density, Quick Disconnect, Environment Resisting (AS81511)
- Class 8: Circular, Reverse Bayonet, General Specification (AS95234)

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1.3 Application

Circular connectors, threaded and bayonet coupling, are intended for cable-to-panel applications. Rectangular connectors are intended for rack-to-panel and cable-to-cable/rack applications.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AS16721	Insert Arrangements for AS81582
AS29600	Connectors, Electrical, Circular, Miniature, Composite, High Density, Quick Coupling, Environment Resistant, Removable Crimp Contacts Associated Hardware, General Specification For
AS33698	Insert Arrangements, Electric Connector, Shell Size 3 (For AS81703 Connectors)
AS33699	Insert Arrangements, Electric Connector, Shell Size 7
AS33700	Insert Arrangements, Electric Connector, Shell Size 12
AS33701	Insert Arrangements, Electric Connector, Shell Size 19
AS33702	Insert Arrangements, Electric Connector, Shell Size 27
AS33703	Insert Arrangements, Electric Connector, Shell Size 37
AS39029	Contacts, Electrical Connector, General Specification For
AS50151	Connectors, Electrical, Circular Threaded, AN Type, General Specification For
AS81511	Connectors, Electrical, Circular, High Density, Quick Disconnect, Environment Resisting and Accessories, General Specification for
AS81582	Connectors, Electrical, Bayonet Coupling, Environment Resisting, Umbilical, General Specification For
AS81659	Connectors, Electrical, Rectangular Crimp Contacts, General Specification For
AS81703	Connectors, Electric, Circular, Miniature, Rack and Panel or Push-Pull Coupling, Environment Resisting
AS81969	Installing and Removal Tools, Connector Electrical Contact, General Specification For
AS85028	Connector, Electrical, Rectangular, Individual Contact Sealing, Polarized Center Jackscrew, General Specification For
AS95234	Connectors, Electrical, Reverse Bayonet, General Specification For

2.2 Electronic Industries Association (EIA) Publications

Available from Electronic Component Association (ECA), 2500 Wilson Boulevard, Arlington, VA 22201-3834, Tel: 703-907-7500, www.eia.org.

EIA RS-359 Standard Colors for Color Identification and Coding (ANSI C-83.1-1973)

EIA364 Connector Test Method Standards

2.3 Military Standards

MS3425	Insert Arrangements, AS81511 Electric Connector, Size 8
MS3426	Insert Arrangements, AS81511 Electric Connector, Size 10
MS3428	Insert Arrangements, AS81511 Electric Connector, Size 14
MS3429	Insert Arrangements, AS81511 Electric Connector, Size 16
MS3430	Insert Arrangements, AS81511 Electric Connector, Size 18
MS3431	Insert Arrangements, AS81511 Electric Connector, Size 20
MS3432	Insert Arrangements, AS81511 Electric Connector, Size 22
MS3433	Insert Arrangements, AS81511 Electric Connector, Size 24
MIL-STD-1560	Insert Arrangements for MIL-DTL-38999, MIL-DTL-27599 and AS29600 Series A Electrical Connectors
MIL-STD-1651	Insert Arrangements for AS50151, MIL-DTL-22992 (Classes C, J, and R), and MIL-DTL-83723 (Series II) Electrical Connectors
MIL-STD-1674	Insert Arrangements for AS85028

NOTE: MS3425 through MS3433 are the insert arrangement documents specified by AS29600 for series B connectors.

3. REQUIREMENTS

3.1 General

The qualification, materials, design, construction, intermateability, interchangeability and performance requirements applicable to electrical connectors specified in this ARP shall be in accordance with those requirements of the specification referenced for each particular connector specified herein.

3.2 Class 1 Electrical Connectors (AS50151)

Class 1 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: Thread
- b. Shell sizes: 8S, 10S, 10SL, 12, 12S, 14, 14S, 16, 16S, 18, 20, 22, 24, 28, 32, 36, 40, 44, 48
- c. Contact sizes: 0, 4, 8, 12, 16, Inserts in accordance with MIL-STD-1651.
- d. Contact termination: Crimp and Solder

- e. Contact retention: Rear insertion/extraction, Rear insertion/front extraction
- f. Usage characteristics: Temperature range -55 to +125 °C (Class A, B, C, E, P, and R); -55 to +175 °C (Class D, H, W, K, DT, WT, DY, WY, DZ, and WZ); -55 to +200 °C (Class L and U)
- g. Configurations: Per Table 1, herein. Front release crimp contacts in accordance with AS39029/44 and AS39029/45. Rear release contacts in accordance with AS39029/29 and AS39029/30. Grommet sealing plugs in accordance with MS3187. Protective covers in accordance with AS25042 and AS25043. Dust caps in accordance with AS85049/138. Front release contact installing/removal tools in accordance with AS81969/17 contact insertion tool and AS81969/19 contact removal tool. Rear release contact installing/removal tools in accordance with AS81969/14 contact insertion tool and AS81969/14 and MIL-I-81969/15 contact removal tools. See specification for rear-end accessory hardware.

3.3 Class 2 Electrical Connectors (AS29600)

Class 2 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: Triple start thread with anti-decoupling mechanism
- b. Shell sizes: 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
- c. Contact sizes: 8, 12, 16, 20, 22D-23, Series A uses MIL-DTL-38999 insert arrangements (MIL-STD-1560), Series B uses AS81511 insert arrangements (MS3425 thru MS3433).
- d. Contact Termination: Crimp
- e. Contact retention: Rear insertion/extraction
- f. Usage characteristics: Temperature range: -65 to +175 °C. Environment resisting, EMI shielded and non-shielded, Class G for space grade, 1500 cycle durability and 2000 hour corrosion resistance.
- g. Configuration: Per Table 2, herein. Contacts in accordance with AS39029/17, /18, /56, and /58 for 500 cycle durability capability, contacts in accordance with AS29600/13, /14, /23, and /24 for 1500 cycle durability capability. Installing removal tools in accordance with AS81969/16 for Series B connectors and AS81969/8 and /14 for Series A connectors. Grommet sealing plugs in accordance with MS27488 and AS85049/80.

3.4 Class 3 Electrical Connectors (AS81582)

Class 3 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: 3 Pin Bayonet with lanyard release mechanism.
- b. Shell sizes: 8, 10, 12, 14, 16, 18, 20, 22, 24
- c. Contact sizes: 12, 16, 20, Inserts in accordance with AS16721.
- d. Contact termination: Crimp and solder
- e. Contact retention: Rear insertion/extraction and non-removable
- f. Usage characteristics: Temperature range: Connectors -55 to +200 °C; Adapter assemblies -55 to 125 °C, Environment resisting, Quick disconnect, EMI/RFI shielded and non-shielded, Umbilical.
- g. Configuration: Per Table 3, herein. Contacts in accordance with AS39029. Inserts in accordance with AS16721. AS81582/4-Connector adapter, RFI shielded, Cable to connector, AS81582/5-Connector adapter, Right angle, RFI shielded, Connector to connector, AS81582/6-Adapter assembly, Umbilical cable to stores interface, Lanyard release, AS81582/7- Adapter assembly, Umbilical cable to stores interface, Lanyard release, AS81582/8-Adapter assembly, Umbilical cable to stores interface, Lanyard release.

3.5 Class 4 Electrical Connectors (AS81659)

Class 4 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: Rack and panel, axial engage/disengage
- b. Shell sizes: Single/dual/triple/quadruple insert accommodation
- c. Contact sizes: 12, 16, 20, 22 (Users shall obtain coaxial contacts separately from the manufacturer of the connector being employed, except coaxial contacts for the "C2" and "C3" insert arrangements shall be supplied with the connector.) Inserts in accordance with MS3157.
- d. Contact termination: Crimp
- e. Contact retention: Rear insertion/extraction
- f. Usage characteristics: Temperature range: -65 to +125 °C. Environment resisting; Fluid-resisting, Conductive finish
- g. Configuration: Per Table 4, herein. Pin contacts-AS39029/11, Socket contacts-AS39029/12, Grommet sealing plugs, MS27488, Contact crimping tools-AS22520, Contact installing/removal tools-AS81969.

Listed inserts may be used in single insert connectors or in various combinations in dual insert connectors; see AS81659 and MS3157 for insert designator numbers for development of connector part numbers. Connectors are designed to be used with furnished, user-installed polarizing keys in optional positions; see AS81659 for position designators.

3.6 Class 5 Electrical Connectors (AS81703)

Class 5 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: Rack and Panel or Push Pull Coupling
- b. Shell sizes: 3, 7, 12, 19, 27, 37, and 61
- c. Contact sizes: 12, 16, and 20, Inserts in accordance with AS33698 through AS33703.
- d. Contact termination: Crimp and solder
- e. Contact retention: Rear insertion/extraction and non-removable
- f. Usage characteristics: Temperature range: Series 1 -55 to +125 °C, Series 2 -55 to +175 °C, Series 3 -55 to +200 °C
- g. Configuration: Per table 5 herein. Grommet seal, potting seal and hermetic seal classes. Solder contact termination types-Solder cup and Eyelet. Includes through-bulkhead contacts. Inserts in accordance with AS31571. Protective covers in accordance with AS31821 and AS31831. Dust caps in accordance with AS85049/138.

3.7 Class 6 Electrical Connectors (AS85028)

Class 6 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: Center Jackscrew to Center Hardware
- b. Shell sizes: Dash 1 through 5
- c. Contact sizes: 16, Inserts-AS33698, AS33699, AS33700, AS33701, AS33702, and AS33703.
- d. Contact termination: Crimp

- e. Contact retention: Rear insertion/extraction
- f. Usage characteristics: Temperature range: -65 to +150 °C
- g. Configuration: Per Table 6, herein. Class E environmental and fluid resisting. Contacts in accordance with AS39029. Contact crimping tools-AS22520, Contact installing/removal tools-AS81969. Type F-threaded female, Type R-recessed jackscrew, Type J-extended jackscrew. Interfacial Seal-AS85028/3, Sealing Plug-AS85028/4, Wire Seal-AS85028/5, Wire Seal Replacement Tool-AS85028/6.

3.8 Class 7 Electrical Connectors (AS81511)

Class 7 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: 3 pin bayonet coupling, positive detent, audible
- b. Shell sizes: 8, 10, 14, 16, 18, 20, 22, and 24
- c. Contact sizes: 23-22, 20, 16, and 12, Inserts in accordance with AS81511 Appendix A.
- d. Contact termination: Crimp
- e. Contact retention: Rear insertion/extraction, Individual contact release-Series 3 and 4, Gang release-Series 1 and 2. Removal tool applied from front for series 1 and 2, from the rear for series 3 and 4.
- f. Usage characteristics: Temperature range: -65 to +150 °C for class E, -65 to +175 °C for class F and W, -65 to +200 °C for class A.
- g. Configuration: Per table 8 herein. Scoop proof, EMI shielding capability. Grommet seal, fluid resistant. Long shell and short shell versions. Pin contacts-AS39029/18 and /47, Socket contacts-AS39029/16, /17, /33, and /46. Contact installing/removal tools-AS81969. Series 1 intermates with series 3, series 2 intermates with series 4. Accessories-AS81511/13 and /14. Contact sealing plug-AS81511/15. Protective cap-AS81511/16. Protective covers-AS81511/17 and /18. Dummy stowage receptacle-AS81511/19. Slotted hex nut-AS81511/20.

3.9 Class 8 Electrical Connectors (AS95234)

Class 8 electrical connectors shall, as a minimum, have the following application characteristics:

- a. Coupling method: Reverse bayonet coupling
- b. Shell sizes: 10SL, 14S, 16S, 16, 18, 20, 22, 24, 28, 32, and 36
- c. Contact sizes: 16, 12, 8, 4, and 0, Inserts in accordance with MIL-STD-1651 and AS95234 Appendix B.
- d. Contact termination: Crimp and Solder
- e. Contact retention: Rear insertion/extraction for crimp contacts, solder contacts are non-removable.
- f. Usage characteristics: Temperature range: -55 to +125 °C, voltages from 200 to 3000 volts-rms.
- g. Configuration: Per Table 7 herein. High current, water tight connector for shipboard, ground vehicle and ground support equipment usage. Pin contact-AS39029/44, Socket contact-AS39029/45. Contact installing/removal tools-AS81969.

- h. AS95234 includes reverse bayonet coupling, high current electrical connectors that are water tight and principally used in shipboard, ground vehicles and ground support equipment applications at -55 °C and +125 °C. The upper temperature is the maximum internal hot spot temperature resulting from any combination of electrical load and ambient conditions. AS95234 connectors are typically intermateable with similar reverse bayonet couple connectors, but are not interchangeable, because these connectors have defined AS85049 accessory threads. Suppliers should be contacted to determine the extent these connectors can be mated with similar reverse bayonet couple connectors. These connector are not for aerospace applications (see AS50881).

4. QUALITY ASSURANCE PROVISIONS

Quality assurance provisions applicable to electrical connectors specified in this ARP shall be in accordance with those provisions specified in the specification referenced for each particular connector. Unless otherwise specified in the referenced specification, testing of connectors shall be in accordance with EIA 364.

5. PREPARATION FOR DELIVERY

Preparation for delivery provisions applicable to electrical connectors specified in this ARP shall be in accordance with those provisions specified in the specification referenced for each particular connector.

6. NOTES

6.1 Intended Use

Electrical connectors listed in this specification are principally intended for use in aerospace vehicles (except as noted) including military/commercial airplane and missile airframes, propulsion units, and associated avionics components, but are also used in sea and ground mobility applications. These connectors represent items primarily for power, control, and instrumentation cable interconnection applications for equipment designs and may be used for repair and retrofit purposes on existing equipment for those connector types listed in the tables herein under the "Intermates With" column.

6.1.1 Preferred Connectors for Aerospace Applications

For new aerospace applications/designs, use connectors that meet the requirements specified in AS50881.

6.2 Connector Size Classification

Connector size infers the ratio of the dimensional envelope and weight characteristics of a connector configuration versus the typical spacing of contacts, or concentration, contained within the connector insert (at times designated as "density"). For specific details, see the governing specification which defines each class of connectors.

6.3 Part Numbers

Part numbers assigned to electrical connectors are in accordance with the specification sheets referenced for specific connector configurations specified in this Recommended Practice. Part numbers are limited to those configurations, classes, shell sizes, and insert arrangements and positions specified in the tables of this document.

6.4 Terminology

Terminology utilized herein is in accordance with ARP914.

- 6.5 A change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications nor in documents that contain editorial changes only.

TABLE 1 - CLASS 1, CIRCULAR, STANDARD, THREADED COUPLING CONNECTOR CONFIGURATIONS

CONNECTOR DESCRIPTION	SPECIFICATION	CLASS	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT 1/			
					SHELL SIZE	MIL-STD-1651		QTY/SIZE CONTACTS
						SECTION	ARR. #	
RECEPTACLE WALL MOUNTING	AS50151	W, L, K	AS34501	AS50151 ALL CLASSES	10SL	20	3	3/16
					16S	50	1	7/16
					18	60	11	5/12
RECEPTACLE BOX MOUNTING	AS50151	W, L, K	AS34521	AS50151 ALL CLASSES	20	70	15	7/12
					20	70	7	8/16
					20	70	27	14/16
RECEPTACLE JAM NUT MOUNTING	AS50151	W, L, K	AS34541	AS50151 ALL CLASSES	22	80	14	19/16
					24	90	10	7/8
					28	100	11	18/16; 4/12
PLUG, CABLE	AS50151	W, L, K	AS34561 AS34591 2/	AS50151 ALL CLASSES	28	100	21	37/16
					28	100	22	3/16; 3/4
					32	110	17	4/4
					36	120	8	46/16; 1/12
					36	120	5	4/0

1/ Normal insert position and first alternate position only are preferred.

2/ AS54591 self-locking coupling mechanism preferred for high vibration/physical shock applications.

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TABLE 2 - CLASS 2, CIRCULAR, MINIATURE, QUICK COUPLING, HIGH DENSITY,
COMPOSITE CONNECTOR CONFIGURATIONS

CONNECTOR DESCRIPTION	SPECIFICATION	SERIES	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT		
					SHELL SIZE	MIL-STD-1560	QTY/SIZE CONTACTS
						ARR. #	
RECEPTACLE FLANGE MOUNTING	AS29600	A	AS29600/10	AS29600/12	9	3	3/20
					9	6	6/22M
					9	35	6/22D
					9	44	4/22
					9	98	3/20
					11	2	2/16
					11	4	4/20
					11	5	5/20
					11	13	13/22M
					11	35	13/22D
					11	98	6/20
					11	99	7/20
					13	4	4/16
					13	8	8/20
					13	22	22/22M
					13	35	22/22D
					13	98	10/20
					15	5	5/16
					15	15	1/16, 14/20
					15	18	18/20
					15	19	19/20
					15	35	37/22D
					15	37	37/22M
					15	97	4/16, 8/20
					17	2	38/22D, 1/8Tx
					17	6	6/12
					17	8	8/16
RECEPTACLE JAM NUT MOUNTING	AS29600	A	AS29600/11	AS29600/12	17	11	1/12Cx, 2/12Tx, 8/20
					17	26	26/20
					17	35	55/22D
					17	55	55/22M
					17	99	2/16, 21/20
					19	11	11/16
					19	18	4/8Tx, 14/22D
					19	28	2/16, 26/20
					19	30	1/16, 29/20
					19	32	32/20
					19	35	66/22D
					19	45	67/22D
					19	66	66/22M
					19	67	67/22M
					21	1	79/22M
					21	11	11/12
					21	16	16/16
					21	24	24/20
					21	25	25/20
					21	27	27/20
					21	35	79/22D
					21	39	2/16, 37/20
					21	41	41/20
					21	75	4/8Tx
					23	1	100/22M
PLUG, CABLE	AS29600	A	AS29600/12	AS29600/10 AS29600/11	23	2	85/22
					23	21	21/16
					23	32	32/20
					23	34	34/20
					23	35	100/22D
					23	36	36/20
					23	53	53/20
					23	55	55/20
					23	97	16/16
					23	99	11/16
					25	1	128/22M
					25	2	100/22
					25	4	8/16, 48/20
					25	7	2/8Tx, 97/22D
					25	8	8/8Tx
					25	11	9/10, 2/20
					25	19	19/12
					25	20	3/8Tx, 4/12Cx, 13/16, 10/20
					25	24	12/12, 12/16
					25	29	19/16
					25	35	128/22D
					25	37	37/16
					25	43	20/16, 23/20
					25	46	2/8Cx, 4/16, 40/20
					25	61	61/20
					25	90	2/8Tx, 4/16, 40/20

TABLE 2 - CLASS 2, CIRCULAR, MINIATURE, QUICK COUPLING, HIGH DENSITY,
COMPOSITE CONNECTOR CONFIGURATIONS (CONTINUED)

CONNECTOR DESCRIPTION	SPECIFICATION	SERIES	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT		
					SHELL SIZE	MIL-STD-1560 ARR. #	QTY/SIZE CONTACTS
RECEPTACLE FLANGE MOUNTING	AS29600	A	AS29600/10	AS29600/12	9	3	3/20
					9	6	6/22M
					9	35	6/22D
					9	44	4/22
					9	98	3/20
					11	2	2/16
					11	4	4/20
					11	5	5/20
					11	13	13/22M
					11	35	13/22D
					11	98	6/20
					11	99	7/20
					13	4	4/16
					13	8	8/20
					13	22	22/22M
					13	35	22/22D
					13	98	10/20
					15	5	5/16
					15	15	1/16, 14/20
					15	18	18/20
					15	19	19/20
					15	35	37/22D
					15	37	37/22M
					15	97	4/16, 8/20
					17	2	38/22D, 1/8Tx
RECEPTACLE JAM NUT MOUNTING	AS29600	A	AS29600/11	AS29600/12	17	6	6/12
					17	8	8/16
					17	11	1/12Cx, 2/12Tx, 8/20
					17	26	26/20
					17	35	55/22D
					17	55	55/22M
					17	99	2/16, 21/20
					19	11	11/16
					19	18	4/8Tx, 14/22D
					19	28	2/16, 26/20
					19	30	1/16, 29/20
					19	32	32/20
					19	35	66/22D
					19	45	67/22D
					19	66	66/22M
					19	67	67/22M
					21	1	79/22M
					21	11	11/12
					21	16	16/16
					21	24	24/20
					21	25	25/20
					21	27	27/20
					21	35	79/22D
					21	39	2/16, 37/20
					21	41	41/20
					21	75	4/8Tx

TABLE 2 - CLASS 2, CIRCULAR, MINIATURE, QUICK COUPLING, HIGH DENSITY,
COMPOSITE CONNECTOR CONFIGURATIONS (CONTINUED)

CONNECTOR DESCRIPTION	SPECIFICATION	SERIES	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT		
					SHELL SIZE	MIL-STD-1560	QTY/SIZE CONTACTS
						ARR. #	
PLUG, CABLE	AS29600	A	AS29600/12	AS29600/10 AS29600/11	23	1	100/22M
					23	2	85/22
					23	21	21/16
					23	32	32/20
					23	34	34/20
					23	35	100/22D
					23	36	36/20
					23	53	53/20
					23	55	55/20
					23	97	16/16
					23	99	11/16
					25	1	128/22M
					25	2	100/22
					25	4	8/16, 48/20
					25	7	2/8Tx, 97/22D
					25	8	8/8Tx
					25	19	19/12
					25	20	3/8Tx, 4/12Cx, 13/16, 10/20
					25	24	12/12, 12/16
					25	29	19/16
					25	35	128/22D
					25	37	37/16
					25	43	20/16, 23/20
					25	46	2/8Cx, 4/16, 40/20
					25	61	61/20
					25	90	2/8Tx, 4/16, 40/20
RECEPTACLE FLANGE MOUNTING	AS29600	B	AS29600/20	AS29600/22	8	04	3425
					8	07	3425
					10	03	3426
					10	05	3426
					10	07	3426
					10	12	3426
					10	14	3426
					14	04	3428
					14	09	3428
					14	19	3428
RECEPTACLE JAM NUT MOUNTING	AS29600	B	AS29600/21	AS29600/22	14	37	3428
					16	07	3429
					16	14	3429
					16	27	3429
					16	55	3429
					18	09	3430
					18	21	3430
					18	38	3430
					18	85	3430
					20	11	3431
PLUG	AS29600	B	AS29600/22	AS29600/20 AS29600/21	20	24	3431
					20	45	3431
					20	92	3431
					22	14	3432
					22	32	3432
					22	61	3432
					22	121	3432
					24	19	3433
					24	41	3433
					24	74	3433
					24	155	3433

TABLE 3 - CLASS 3, CIRCULAR, UMBILICAL, BAYONET COUPLING CONNECTOR CONFIGURATIONS

CONNECTOR DESCRIPTION	SPECIFICATION	CLASS	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT		
					SHELL SIZE	AS16721	QTY/SIZE CONTACTS
						ARRANGEMENT. #	
RECEPTACLE JAM NUT MOUNTING UMBILICAL	AS81582	E	AS81582/1	AS81582/2	22	-3	41/20
PLUG LANYARD RELEASE	AS81582	E	AS81582/2	AS81582/1			

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TABLE 4 - CLASS 4, RECTANGULAR, MINIATURE, RACK AND PANEL, AS81659-TYPE

CONNECTOR DESCRIPTION	SPECIFICATION	TYPE/CLASS/SHELL	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT	
					MS3157 DESIGNATION	QTY/SIZE CONTACTS
RECEPTACLE SINGLE INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/31	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1	26 POSITION 40 POSITION 45 POSITION 57 POSITION 67 POSITION 106 POSITION C2 POSITION C3 POSITION C8 POSITION D8 POSITION 10C3 POSITION 32C2 POSITION 32C4 POSITION 40C1 POSITION 33C4 POSITION	26/16 40/20 45/20 57/20 64/20, 3/16 106/22 2/1 (COAX) 2/7 (COAX), 1/3 (COAX) 8/9 (COAX) 4/16, 4/12 7/20, 3/11 (COAX) 30/20, 2/5 (COAX) 24/20, 4/16, 4/9 (COAX) 39/20, 1/5 (COAX) 25/20, 4/16, 4/5 (COAX)
PLUG SINGLE INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/29	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE DUAL INSERT	AS81659	TYPE II CLASS 1 SHELL A	AS81659/9	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE DUAL INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/35	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
PLUG DUAL INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/33	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE TRIPLE INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/39	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE QUADRUPLE INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/43	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
PLUG TRIPLE INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/37	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
PLUG QUADRUPLE INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL A	AS81659/41	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE TRIPLE INSERT	AS81659 SERIES 2	TYPE II CLASS 2 SHELL B	AS81659/56	AS81659 SHELL B, TYPE I, III, IV. CLASS 1 SERIES 1	124 POSITION	124/20
PLUG TRIPLE INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL B	AS81659/53	AS81659 SHELL B, TYPE I, III, IV. CLASS 1 SERIES 1		

TABLE 4 - CLASS 4, RECTANGULAR, MINIATURE, RACK AND PANEL, AS81659-TYPE (CONTINUED)

CONNECTOR DESCRIPTION	SPECIFICATION	TYPE/CLASS/SHELL	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT	
					MS3157 DESIGNATION	QTY/SIZE CONTACTS
PLUG QUADRUPLER INSERT	AS81659 SERIES 2	TYPE II CLASS 1 SHELL B	AS81659/57	AS81659 SHELL B, TYPE I, III, IV. CLASS 1 SERIES 1	124 POSITION	124/20
PLUG QUADRUPLER INSERT	AS81659 SERIES 2	TYPE II CLASS 2 SHELL B	AS81659/58	AS81659 SHELL B, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE SINGLE INSERT	AS81659 SERIES 2	TYPE III CLASS 1 SHELL A	AS81659/61	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1	26 POSITION 40 POSITION 45 POSITION 57 POSITION 67 POSITION 106 POSITION C2 POSITION C3 POSITION C8 POSITION D8 POSITION 10C3 POSITION 32C2 POSITION 32C4 POSITION 40C1 POSITION 33C4 POSITION	26/16 40/20 45/20 57/20 64/20, 3/16 106/22 2/1 (COAX) 2/7 (COAX), 1/3 (COAX) 8/9 (COAX) 4/16, 4/12 7/20, 3/11 (COAX) 30/20, 2/5 (COAX) 24/20, 4/16, 4/9 (COAX) 39/20, 1/5 (COAX) 25/20, 4/16, 4/5 (COAX)
RECEPTACLE DUAL INSERT	AS81659 SERIES 2	TYPE III CLASS 1 SHELL A	AS81659/62	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE TRIPLE INSERT	AS81659 SERIES 2	TYPE III CLASS 1 SHELL A	AS81659/63	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE QUADRUPLER INSERT	AS81659 SERIES 2	TYPE III CLASS 1 SHELL A	AS81659/64	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
PLUG SINGLE INSERT	AS81659 SERIES 2	TYPE IV CLASS 1 SHELL A	AS81659/65	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE SINGLE INSERT	AS81659 SERIES 2	TYPE IV CLASS 1 SHELL A	AS81659/66	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE SINGLE INSERT	AS81659 SERIES 2	TYPE IV CLASS 1 SHELL A (CLINCH NUT MOUNT)	AS81659/67	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE SINGLE INSERT	AS81659 SERIES 2	TYPE IV CLASS 1 SHELL A (FLOAT MOUNT)	AS81659/68	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
PLUG DUAL INSERT	AS81659 SERIES 2	TYPE IV CLASS 1 SHELL A	AS81659/69	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE DUAL INSERT	AS81659 SERIES 2	TYPE IV CLASS 1 SHELL A (CLINCH NUT MOUNT)	AS81659/71	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		
RECEPTACLE DUAL INSERT	AS81659 SERIES 2	TYPE IV CLASS 1 SHELL A (FLOAT MOUNT)	AS81659/72	AS81659 SHELL A, TYPE I, III, IV. CLASS 1 SERIES 1		

TABLE 5 - CLASS 5, CIRCULAR, MINIATURE, RACK AND PANEL OR PUSH-PULL COUPLING

CONNECTOR DESCRIPTION	SPECIFICATION	TYPE/CLASS/SERIES	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT		
					AS DETAIL SHEET	INSERT DESIGNATION	QTY/SIZE CONTACTS
RECEPTACLE WALL MOUNT	AS81703	SOLDER TYPE CLASS E, P, J SERIES 1	AS31301	AS31371 AS31381	AS33698 AS33699 AS33700 AS33700 AS33701 AS33701 AS33701 AS33701 AS33702 AS33702 AS33702 AS33702 AS33702 AS33702 AS33702 AS33702 AS33703 AS33703 AS33703 AS33704 AS33704	3-50 7-50 12-6 12-50 19-4 19-7 19-12 19-50 27-2 27-3 27-4 27-5 27-8 27-11 27-22 27-24 27-50 37-2 37-3 37-50 61-42 61-50	3/20 7/20 6/20 12/20 22/20 4/12 7/12 19/20 14/16 14/20, 2/16 10/20 19/16 6/16, 4/12 12/20 22/20 24/20 27/20 24/16 12/12 37/20 4/16, 29/20, 8/12 61/20
RECEPTACLE BOX MOUNT	AS81703	SOLDER TYPE CLASS E, H SERIES 1	AS31321	AS31371 AS31381			
RECEPTACLE JAM NUT MOUNT	AS81703	SOLDER TYPE CLASS E, P, J, H SERIES 1	AS31341	AS31371 AS31381			
RECEPTACLE DUMMY STOWAGE	AS81703	SERIES 1 AND 2	AS31351	AS31371 AS31381			
RECEPTACLE THROUGH BULKHEAD	AS81703	CLASS E SERIES 1	AS31391	AS31371 AS31381			
PLUG	AS81703	SOLDER TYPE CLASS E, P, J SERIES 1	AS31371	ALL SERIES 1, 2 AND 3 RECEPTACLES			
PLUG LANYARD	AS81703	SOLDER TYPE CLASS E, P, J SERIES 1	AS31381	ALL SERIES 1, 2 AND 3 RECEPTACLES			
RECEPTACLE WALL MOUNT	AS81703	CRIMP TYPE CLASS E, J SERIES 2	AS31401	AS31471 AS31481			
RECEPTACLE JAM NUT MOUNT	AS81703	CRIMP TYPE CLASS E, J SERIES 2	AS31441	AS31471 AS31481			
PLUG	AS81703	CRIMP TYPE CLASS E, J SERIES 2	AS31471	AS31401 AS31441			
PLUG LANYARD	AS81703	CRIMP TYPE CLASS E, J SERIES 2	AS31481	AS31401 AS31441			
PLUG RACK & PANEL	AS81703	CRIMP TYPE CLASS E SERIES 2	AS34451	AS31301 AS31321 AS31401 AS31491			
RECEPTACLE HERMETIC SOLDER MOUNT	AS81703	SOLDER TYPE CLASS H SERIES 3	AS34631	AS34451 AS34461 AS34671 AS34681			
RECEPTACLE HERMETIC BOX MOUNT	AS81703	SOLDER TYPE CLASS H SERIES 3	AS34661	AS34451 AS34461 AS34671 AS34681			

TABLE 5 - CLASS 5, CIRCULAR, MINIATURE, RACK AND PANEL OR PUSH-PULL COUPLING (CONTINUED)

CONNECTOR DESCRIPTION	SPECIFICATION	TYPE/CLASS/SERIES	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT		
					AS DETAIL SHEET	INSERT DESIGNATION	QTY/SIZE CONTACTS
RECEPTACLE HERMETIC JAM NUT MOUNT	AS81703	SOLDER TYPE CLASS H SERIES 3	AS34691	AS34671 AS34681	AS33698 AS33699 AS33700 AS33700 AS33701 AS33701 AS33701 AS33701	3-50 7-50 12-6 12-50 19-4 19-7 19-12 19-50	3/20 7/20 6/20 12/20 4/12 7/12 12/16 19/20
RECEPTACLE HERMETIC BOX MOUNT	AS81703	CRIMP TYPE CLASS N SERIES 3	AS31451	AS34671 AS34681 AS34461			
RECEPTACLE HERMETIC SOLDER MOUNT	AS81703	CRIMP TYPE CLASS N SERIES 3	AS31461	AS34671 AS34681 AS34461			
RECEPTACLE HERMETIC SINGLE HOLE MOUNT	AS81703	CRIMP TYPE CLASS N SERIES 3	AS31491	AS34671 AS34681 AS34461			
RECEPTACLE WALL MOUNT	AS81703	CRIMP TYPE CLASS L, E SERIES 3	AS34241	AS34671 AS34681 AS34461			
PLUG RACK & PANEL	AS81703	CRIMP TYPE CLASS L, E SERIES 3	AS34461	AS34631 AS34661 AS31451 AS31461 AS34241			
RECEPTACLE JAM NUT MOUNT	AS81703	CRIMP TYPE CLASS L, E SERIES 3	AS34641	AS34671 AS34681	AS33702 AS33702 AS33702 AS33702 AS33702 AS33702 AS33702 AS33702 AS33702	27-2 27-3 27-4 27-5 27-8 27-11 27-22 27-24 27-50	14/16 14/20, 2/16 10/20 19/16 6/16, 4/12 12/20 22/20 24/20 27/20
PLUG	AS81703	CRIMP TYPE CLASS L, E SERIES 3	AS34671	AS34631 AS34661 AS34691 AS31451 AS31461 AS31491 AS34241	AS33703 AS33703 AS33703 AS33704 AS33704	37-2 37-3 37-50 61-42 61-50	24/16 12/12 37/20 4/16, 29/20, 8/12 61/20
PLUG LANYARD	AS81703	CRIMP TYPE CLASS L, E SERIES 3	AS34681	AS34631 AS34661 AS34691 AS31451 AS31461 AS31491 AS34241			

TABLE 6 - CLASS 6, RECTANGULAR, POLARIZED CENTER JACKSCREW, GENERAL PURPOSE

CONNECTOR DESCRIPTION	SPECIFICATION	TYPE/CLASS/SERIES	DETAIL SHEET	INTERMATES WITH	INSERT ARRANGEMENT		
					INSERT SPECIFICATION	INSERT DESIGNATION	QTY/SIZE CONTACTS
PLUG	AS85028	POLARIZED CENTER HARDWARE TYPE F CLASS E	AS85028/1	AS85028/2	MIL-STD-1674	10.1 20.1 30.1 40.1 50.1	52/16 80/16 104/16 158/16 212/16
RECEPTACLE	AS85028	POLARIZED CENTER JACKSCREW TYPE R & J CLASS E	AS85028/2	AS85028/1			