

Amphenol® JT/LJT

high reliability and high contact density
with maximum weight and space savings



Amphenol® JT Connector



Amphenol® LJT Connector

Amphenol® LJT and JT Series subminiature cylindrical connectors are qualified to MIL-DTL-38999*, Series I and II respectively. These connectors were developed to meet the needs of the aerospace industries, and provided the impetus for development of the MIL-C-38999 specifications, which recently were superseded by MIL-DTL-38999. Meeting or exceeding MIL-DTL-38999 requirements, Amphenol® JT/LJT connectors feature:

- **Lightweight, Space Saving Design**
- **Contact Protection** - 100% scoop-proof LJT design prevents bent pins and short circuits during mating
- **Quick Positive Coupling** - 3 point bayonet lock system
- **Mismating Eliminated** - with 5 key/keyway design
- **Error Proof Alternate Positioning** - insured by different key/keyway locations
- **EMI Shielding** - grounding fingers standard in LJT Series; optional in JT Series
- **Nine Shell Sizes and a Variety of Shell Styles**
- **Contact Options** - size 8, 10, 12, 16, 20, 22M and 22D Crimp, Solder, PCB, Wire wrap, Coax, Twinax, Triax, Thermocouple, Fiber Optic and Filter
- **Fixed Solder Contacts** - per MIL-C-27599 (see page 45)
- **Hermetic** - air leakage limited to $1 \times 10^{-7} \text{ cm}^3$ per second optional
- **Inventory Support Commonality** - uses standard MIL-C-38999 contacts, insert arrangements and application tools.

Where proof of high reliability and lot control is required, MS approved equivalents to most proprietary JT and LJT connectors are available.

For additional information on Amphenol® JT/LJT connectors, or for special application requirements, contact your local sales office or

Amphenol Corporation
Amphenol Aerospace
40 – 60 Delaware Avenue
Sidney, New York 13838-1395
Telephone: 607-563-5011
Fax: 607-563-5157
www.amphenol-aerospace.com

* MIL-DTL-38999 Series I supersedes MIL-C-38999 Series I.
MIL-DTL-38999 Series II supersedes MIL-C-38999 Series II.

JT/LJT

the subminiature cylindrical for every application



Wall Mounting Receptacle



Box Mounting Receptacle



Straight Plug



Jam Nut Receptacle



90° Plug



Solder Mounting Receptacle



Wall Mounting Receptacle



Line Receptacle



Jam Nut Receptacle



Straight Plug



Solder Mounting Receptacle

Components

Shell components are impact extruded or machined bar stock aluminum. Standard plating on shell components is cadmium over nickel. Many finishes are optional (see "Specifications" page 3). Hermetic seal receptacles are available in carbon steel or stainless steel shells. Dependable 5 key/keyway polarization with bayonet lock coupling is incorporated to aid and assure positive mating.

Insert material is a rigid dielectric with excellent electrical characteristics, providing durable protection for molded-in solder type contacts. Contrasting letter or number designations are used on insert faces.

A fluorinated silicone interfacial seal wafer is featured on the mating face of "crimp type pin" inserts. This assures complete electrical isolation of pins when connector halves are mated. In addition, a main joint gasket is installed in the receptacle for moisture sealing between connector halves. Both features are also available for hermetic receptacles.

Contacts

Maximum design flexibility is built into the JT/LJT Series, with a minimum of 2 to a maximum of 128 circuits per connector in a wide variety of contact arrangements. Contacts are available in sizes 8, 10, 12, 16, 20, 22, 22D and 22M with standard 50 micro inch minimum gold plating (100 micro inches optional). All socket contacts are probe proof. Crimp type rear removable contacts are featured in JT-R and LJTR connectors. Solder termination contacts are also available, as well as PCB, wire wrap, thermocouple, fiber optic, coaxial, triaxial and twinax contact options.

Optional Features

High temperature capability of 392°F is available only in JTS or LJTS crimp type connectors. High temperature versions feature gold plated contacts, high temperature shell plating, stainless steel coupling nut spring, and epoxy inserts/fluorinated silicone grommet combination. Standard temperature capability for both solder and crimp is 302°F.

The JTN or LJTN type connectors are available for N₂O₄ resistance provided they are mated, and ungrommated rear faces are suitably protected.

For complete listing and definition of connector types, shell styles and service classes, see How to Order, page 49.

JT/LJT

specifications

CONTACT RATING

Contact Size	Test Current		Maximum Millivolt Drop Crimp*	Maximum Millivolt Drop	
	Solder & Crimp	Hermetic		Solder*	Hermetic*
22M	3	2	45	20	60
22D	5	3	73		85
22	5	3	73	20	85
20	7.5	5	55	20	60
16	13	10	49	20	85
12	23	17	42	20	85
10 (Power)	33	NA	33	NA	NA

Contact Size	Crimp Well Data		Solder Well Data	
	Well Diameter	Nominal Well Depth	Well Diameter	Nominal Well Depth
22M	.028 ±.001	.141	.029 ^{+.004} _{-.000}	
22D	.0345 ±.0010	.141		
22	.0365 ±.0010	.141	.036 ^{+.004} _{-.000}	.094
20	.047 ±.001	.209	.044 ^{+.004} _{-.004}	.125
16	.067 ±.001	.209	.078 ^{+.000} _{-.004}	.141
12	.100 ±.002	.209	.116 ^{+.004} _{-.002}	.141
10 (Power)	.137 ±.002	.355	NA	NA

* When tested using silver plated wire.

SERVICE RATING**

Service Rating	Suggested Operating Voltage (Sea Level)		Test Voltage (Sea Level)	Test Voltage 50,000 Ft.	Test Voltage 70,000 Ft.	Test Voltage 110,000 Ft.
	AC (RMS)	DC				
M	400	500	1300 VRMS	550 VRMS	350 VRMS	200 VRMS
N	300	450	1000 VRMS	400 VRMS	260 VRMS	200 VRMS
I	600	850	1800 VRMS	600 VRMS	400 VRMS	200 VRMS
II	900	1250	2300 VRMS	800 VRMS	500 VRMS	200 VRMS

** Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

FINISH DATA

Aluminum Shell Components Non-Hermetic				
Finish	Suffix		Indicated Finish Standard for JT Types Listed Below	Indicated Finish Standard for LJT Types Listed Below
	Military	Proprietary		
Cadmium Plated Nickel Base	MS (A)	—	JT/JTG/JTL/JTP	LJT/LJTP
Anodic Coating (Alumilite)	MS (C)	(005)	JTS/JTPS/JTLS	LJTPS/LJTS
Chromate Treated (Iridite 14-2)		(011)	JTN/JTPN/JTLN	LJTN/LJTPN
Olive Drab Cadmium Plate Nickel Base	MS (B)	(014)		
Electroless Nickel	MS (F)	(023)		










Hermetic Connectors				
Material/Finish	Suffix		Indicated Finish Standard for JT Types Listed Below	Indicated Finish Standard for LJT Types Listed Below
	Military	Proprietary		
Carbon Steel Shell Tin Plated Shell and Contacts			JT()H/JT()Y JTL()H/JTL()Y	LJT()Y/LJT()H
Carbon Steel Shell Tin Plated Shell and Gold Plated Contacts	MS (D)			
Stainless Steel Shell Gold Plated Contacts	MS (E)	(162)	JTS()Y JTLS()Y	LJTS()Y









JT/LJT








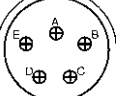
insert arrangements


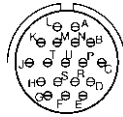
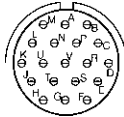
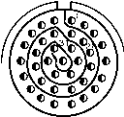
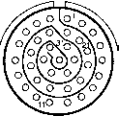
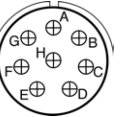
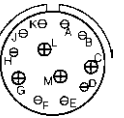
black arrangements – JT or LJT
green arrangements – JT only
blue arrangements – LJT only

front face of pin inserts illustrated


									
Insert Arrangement (JT)	8-2	8-3	8-6			8-35	8-44	8-97	8-98
Insert Arrangement (LJT)		9-3	9-6	9-7	9-22	9-35	9-44		9-98
Service Rating	M	M	M	M	I	M	M	M	I
Number of Contacts	2	3	6	7	2	6	4	2 2	3
Contact Size	20	20	22M	22M	20	22D	22	22M 20	20

								
Insert Arrangement (JT)		10-4	10-5		10-13	10-35	10-98	10-99
Insert Arrangement (LJT)	11-2	11-4	11-5	11-6	11-13	11-35	11-98	11-99
Service Rating	I	I	I	I	M	M	I	I
Number of Contacts	2	4	5	6	13	13	6	7
Contact Size	16	20	20	20	22M	22D	20	20


								
Insert Arrangement (JT)	12-3	12-4	12-8	12-22	12-35	12-98	14-4	14-5
Insert Arrangement (LJT)	13-3	13-4	13-8	13-22	13-35	13-98	15-4	15-5
Service Rating	II	I	I	M	M	I	I	II
Number of Contacts	3	4	8	22	22	10	4	5
Contact Size	16	16	20	22M	22D	20	12	16


							
Insert Arrangement (JT)	14-15	14-18	14-19	14-35	14-37	14-68	14-97
Insert Arrangement (LJT)	15-15	15-18	15-19	15-35	15-37	15-68	15-97
Service Rating	I	I	I	M	M	I	I
Number of Contacts	14 1	18	19	37	37	8	8 4
Contact Size	20 16	20	20	22D	22M	16	20 16


CONTACT LEGEND



















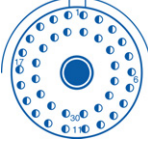
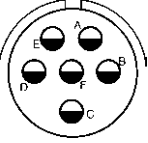
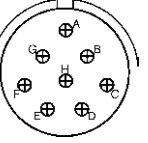
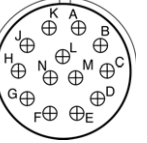
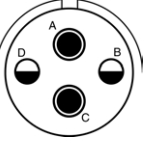
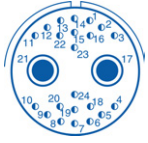
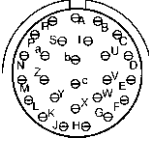
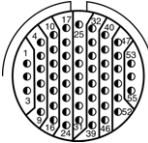
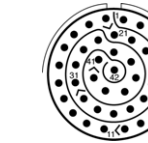
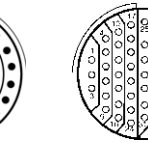
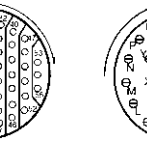
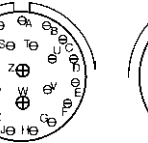
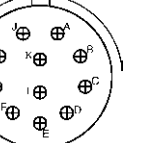
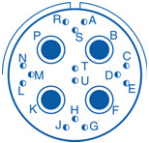


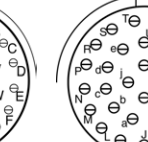
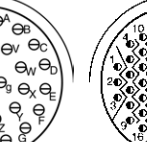
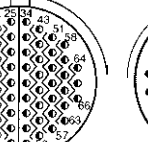
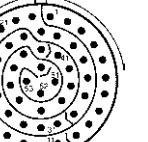
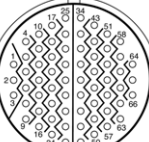
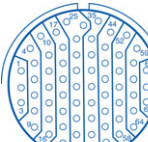
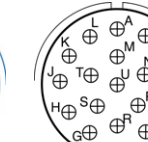

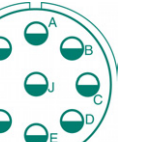
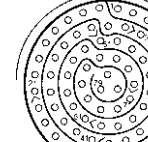
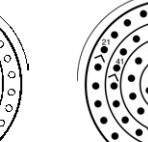

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JT/LJT

insert arrangements

black arrangements – JT or LJT
green arrangements – JT only
blue arrangements – LJT only

front face of pin inserts illustrated

							
Insert Arrangement (JT)	17-2	16-6	16-8	16-13	17-22	17-25	16-26
Insert Arrangement (LJT)		17-6	17-8	17-13			17-26
Service Rating	M	I	II	I	Coax	M	I
Number of Contacts	38 1	6	8	13	2 2	22 2	26
Contact Size	22D 8 Twinax	12	16	16	12 Coax 8 Coax	22D 8 Coax	20
							
Insert Arrangement (JT)	16-35	16-42	16-55	16-99	18-11		
Insert Arrangement (LJT)	17-35	17-42	17-55	17-99	19-11	19-18	
Service Rating	M	M	M	I	II	M	
Number of Contacts	55	42	55	21 2	11	14 4	
Contact Size	22D	22	22M	20 16	16	22D 8 Twinax	
							
Insert Arrangement (JT)	18-28	18-30	18-32	18-35	18-53	19-53	18-66
Insert Arrangement (LJT)	19-28	19-30	19-32	19-35			19-66
Service Rating	I	I	I	M	M	M	
Number of Contacts	26 2	29 1	32	66	53	66	
Contact Size	20 16	20 16	20	22D	22	22M	
							
Insert Arrangement (JT)		18-68	18-96	20-1	20-2		
Insert Arrangement (LJT)	19-67	19-68		21-1	21-2		
Service Rating	M	I	I	M	M		
Number of Contacts	67	18	9	79	65		
Contact Size	22M	16	12	22M	22		

CONTACT LEGEND



PROPRIETARY PART NUMBER

To more easily illustrate ordering procedure, part number JT00RE-22-2PA() is shown as follows:

PART NUMBER							
JT	00	RE	-	22	-	2	P A ()
1	2	3	4	5	6	7	8/9

See code below:

1. Connector Type:

JT	designates standard Junior Tri-Lock connector
LJT	designates long Junior Tri-Lock connector
LJTS	JTS designates high temperature connector
LJTN	JTN designates chemical and fuel resistant
JTL	designates miniature mounting dimensions
JTLN	designates miniature mounting dimensions - chemical resistant
JTLS	designates miniature mounting dimensions - high temperature
LJTPQ	JTPQ designates back panel mounted wall mounting receptacle
LJTP	JTP designates back panel mounted box mounting receptacle
LJTPN	JTPN designates back panel mounted - chemical resistant
LJTPS	JTPS designates back panel mounted - high temperature
JTG	designates plug with grounding fingers*
JTNG	designates plug with grounding fingers* - chemical resistant

2. Shell Style:

00	designates wall mount receptacle
01	designates line mount receptacle
02	designates box mount receptacle
06	designates straight plug
07	designates jam nut receptacle
08	designates 90 degree plug
I	designates solder mount receptacle - hermetic

3. Service Class: Solder contacts/connectors:

"P"	for potting applications - These connectors are supplied with a potting boot. [†] All shells are designed with integral features to retain potting boots.
"A"	for general duty applications.
"A (SR)"	- threaded rear design with strain relief. [†]
"C"	for pressurized applications.
"C" (SR)"	- threaded rear design with strain relief. [†]
"H"	for hermetic applications - Fused compression glass sealed inserts. Leakage rate less than .01 micron cu. ft./hr. (1 x 10 ⁻⁷ cc/sec.) at 15 psi differential.
"Y"	same as "H" with interfacial seal.
"T"	for MS27599A applications - general duty, pressurized (receptacles only)

3. Service Class: Crimp contacts/connectors:

"RP"	for potting crimp applications. Supplied with spacer grommet and potting boot. [†]
"RE"	for environmental crimp applications. Supplied with a grommet and compression nut. [†] Can be supplied with strain relief integral with compression nut "RE (SR)". (JT Series only).
"RGF"***	electroless nickel plated ground plane aluminum, 200°C
"RGW"***	olive drab cadmium plated ground plane aluminum, 175°C
"RT"	for environmental applications. Supplied without rear accessories. Design provides serrations on rear threads of shells.

For additional information defining description of service class, consult Amphenol, Sidney, NY.

4. Shell Size:

JT shell sizes available from 8 through 24.
LJT shell sizes available from 9 through 25.

5. Insert Arrangement:

22-2 designates insert arrangement. Refer to pages 4-9 for insert availability.

6. Contact Style:

P designates pin contacts; S designates socket contacts.

7. Alternate Keying:

"A" designates alternate keying connector assembly. Other basic alternate keys are "B", "C" and "D". No letter required for normal (no rotation) position. See pages 4 and 5.

8. Strain Relief Option:

"SR" designates a strain relief clamp. Strain reliefs are available only on "A", "C" and "RE" class connectors.

9. Finish Variation Suffix:

See finish variations available in table below:

Finish	Military Finish Data	Finish Suffix	Finish plus "SR" Suffix
Cadmium plated nickel base	A		(SR)
Olive drab cadmium plate nickel base	B	(014)	(386)
Electroless nickel	F	(023)	(424)
Electroless nickel, space compatible		(453)	(467)
Anodic coating (Alumilite)	C	(005)	(300)
Chromate treated (Iridite 14-2)		(011)	(344)

MILITARY TYPES

MS27473 E 14 A 18 P A

MS Number

Service Class

Shell Size

Finish

Insert Arrangement A"J0.4.31s

specials - breakaway/quick disconnect, filter protection, aquacon (immersible)

The Amphenol® Fail-Safe Breakaway Connector has been designed for those special applications needing a quick disconnect. Many of the JT features have been designed into the "Fail-Safe," including five-key polarization, three-point bayonet lock coupling, standard insert arrangements and mating interchangeability with JT receptacles. The six-segment design of the ramp sleeve assures complete separation, regardless of coupling orientation. If bayonet pins on the receptacle shell have not been completely coupled into position, the segments (upon lanyard pull) will release the entire receptacle without damage. The Fail-Safe is also available in an LJT configuration. Catalog 12-160 provides more detailed information on Fail-Safe Breakaway Connectors.



Filter and/or voltage surge arresting devices are integrated into a JT or an LJT connector to eliminate conventional bulky exterior filtering systems. This unique design reduces weight, space and user testing while providing system protection from EMI/EMP. Ask for publication 12-120 or contact Amphenol, Sidney, NY for complete information on Amphenol® EMI Filter/Transient Protection Connectors.



Specially designed connectors for underwater and other fluid-immersion applications are available in all Amphenol® JT/LJT insert arrangements. Aquacon AJ (immersible JT) or AL (immersible LJT) series connectors offer 1500 psi capability, visual mating indication to assure proper sealing upon mating, and design flexibility at low cost. Corrosion resistant materials and environment-proof molded cable terminations provide a connector well suited to immersed usage. AJ and AL Series Aquacon Connectors represent the utmost in general purpose immersible connectors. Refer to catalog 12-140 for additional data.

