

# Amphenol 97 Series MIL-DTL-5015



## MATES WITH ALL THREADED MIL-DTL-5015 CONNECTORS

The 97 series is a durable, cost-effective MIL-DTL-5015 available in a variety of shell styles, sizes, contacts, and layouts. Contacts are silver-plated with pre-tinned solder cups. These circular connectors are excellent for industrial applications including robotics, machine tools and welding.

- UL-approved & CSA-certified
- Also called MIL-C-5015 or MS

Note: MS-A version (blue insulator) is inactive for new military designs. The 97 series can be purchased under inactive military part numbers, so use caution. MIL-DTL-5015 uses a gray insulator. Obsolete MS-A connectors can be purchased with the original hard blue insulator or the newer sealed construction, using a soft neoprene insulator. For the neoprene insulator, add "-RES" as a suffix to the part number.

## APPLICATIONS

Industrial, commercial and medical applications where cost-effective, general-duty connectors are required.

- Communications systems
- Medical instrumentation
- Ships
- Conveyors
- Motors
- Trucks
- Factory automation
- Mobile equipment
- Trailers
- Industrial machinery
- Sensors

## FEATURES

- Cost-effective
- Wide selection of shell styles and insert patterns
- Threaded coupling, hard dielectric inserts
- Solder termination
- Wide variety of connector finishes
- Solid or split-shell construction
- UL-recognized and CSA-certified

## TECHNICAL SPECIFICATIONS

### MATERIALS & FINISHES

Shell	Aluminum alloy
Plating	Olive drab chromate or clear chromate coating over cadmium plating to QQ-P-416, Black zinc cobalt, electroless nickel or green zinc
Contacts	Brass or copper alloy
Platings	Silver plating to QQ-S-365 (solder contacts have tinned solder pot) Gold plating to MIL-G-45204
Insulator	Diallyl phthalate (Blue color)

# TECHNICAL SPECIFICATIONS

## ELECTRICAL DATA

### Operating Voltage/Test Voltage

SERVICE RATING*	TEST VOLTAGE (RMS 60 cps)	SUGGESTED* OPERATING VOLTAGE		AIR SPACING NOM. (INCHES)	CREEPAGE DISTANCE NOM. (INCHES)
		DC	AC (rms)		
I	1,000	250	200	1/32	1/16
A	2,000	700	500	1/16	1/8
D	2,800	1,250	900	1/8	3/16
E	3,500	1,750	1,250	3/16	1/4
B	4,500	2,450	1,750	1/4	5/16

\* Each insulator has a specific service rating. These numbers should be used by the designer only as a guide. The Service Ratings for each layout are listed on ➔ [pages 64-85](#).

**97 series connectors show no evidence of breakdown when the given test voltages are applied between the two closest contacts and between the shell and the contacts closest to the shell for a period of one minute, per MIL-STD-1344 Method 3001.**

### Current Rating & Contact Resistance

CONTACT SIZE	TEST CURRENT (AMPS)	POTENTIAL DROP (MILLIVOLTS)
16	13	49
12	23	42
8	46	26
4	80	23
0	150	21

Maximum total current to be carried per connector in wire bundles as specified in MIL-W-5088. Contact resistance when tested to MIL-C-39029 will not exceed voltage drops listed in above table.

## MECHANICAL

Wire Range Sizes	24 to 0 AWG
Contact Resistance	(See table above)
Insulation Resistance	> 5,000 megohms at 77°F (25°C) per MIL-DTL-5015, 3.18
Mating Life	100 cycles minimum per MIL-DTL-5015, 3.16
Salt Spray	MIL-STD-1344 Method 1001 Condition B minimum (Cadmium) 48 hour
Heat	+257°F (+125°C) for 60 hours, +185°F (+85°C) for 1,000 hours per MIL-DTL-5015, 4.6.14, minimum
Chemical Resistance	20 hour full immersion (unmated) in hydraulic fluid and lubricating oil per MIL-DTL-5015 minimum
Vibration	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity to MIL-STD-1344 Method 2005 per MIL-DTL-5015
Shock	50g 11 millisecond duration, three major axes 10 microseconds maximum discontinuity to MIL-DTL-5015, 3.13
Contact Type	Solder (hard silver or gold plating)
Number of Circuits	1 to 52 (➔ <a href="#">See pages 64-85</a> )

# TECHNICAL SPECIFICATIONS

Contact retention and separation forces to MIL-DTL-5015, 4.6.6 & 3.26 minimum.

CONTACT SIZE	RETENTION AXIAL LOAD		SEPARATION FORCE MINIMUM	
	NEWTONS	LB	NEWTONS	LB
16	44	10	1	0.25
12	67	15	2	0.50
8	89	20	3	0.75
4	89	20	4	1.00
0	111	25	9	2.00

Polarization

Integral key and keyway plus optional rotational polarization. ➡ See pages 75-85 for valid rotations

Approvals/Agency Listing

UL# E115497; CSA LR69183 for 97 Series

## COMPONENTS

### PLUGS

### RECEPTACLES

Barrel/Shell



Coupling Nut/Spring



Insert Assembly



Insert Retainer Spring



Endbell

