

Amphenol® Tri-Start

offers more versatility & options

than any other interconnection family

The Tri-Start Connector is the high performance choice in the D38999 Family.

Originally designed in order to increase the performance levels of MIL-DTL-38999 Series I and II, the Series III was created to meet high performance connector criteria.

Dynamic features for performance and reliability that were needed for military, aerospace and ground vehicle applications were designed into the Series III that include:

- Rapid coupling via a triple-start thread
- Shell-to-shell or metal-to-metal bottoming
- Improved EMI shielding

The Tri-Start Family of connectors has grown and expanded since its original addition to the 38999 series in order to meet ever-evolving interconnection product needs. Today, the Tri-Start family has styles and options that cover a very wide range to meet not only the highest performance needs of space applications, but also general duty connector needs.

The Tri-Start Connector Series is second to none in terms of versatility and customer options.

The broad portfolio includes Tri-Starts with:

- Aluminum and nickel plated stainless steel shells
- Class K Firewalls
- Composite shells
- Clutch-Lok® high vibration design
- Fiber Optics
- Fail-Safe Lanyard Release connectors
- Variety of contact options: shielded, coax, matched impedance coax, triax, twinax, quadrax, thermocouple, PCB tail and wire wrap
- Ground plane versions and Press-fit® with compliant pins
- ESD (Electrostatic Discharge) protection
- Filter/Transient protection
- Hermetic versions
- Long reach receptacle styles
- Numerous shell geometries, finishes and accessories

See more on Tri-Start specials on pages 48-51.



**Hermetic Tri-Start
MIL-DTL-38999 Series III**



**MIL-DTL-38999 Lanyard
"Breakaway" Connector
Qualified for MIL-STD-1760**



Fiber Optic Multi-Channel D38999



**MIL-DTL-38999 with
Shielded Coax Contacts**



**D38999 Ground Plane with
Metallic Insert, Power
Contacts and
Shielded Twinax
Contacts**



**Filter/Transient
Protection
MIL-DTL-38999 Series III**

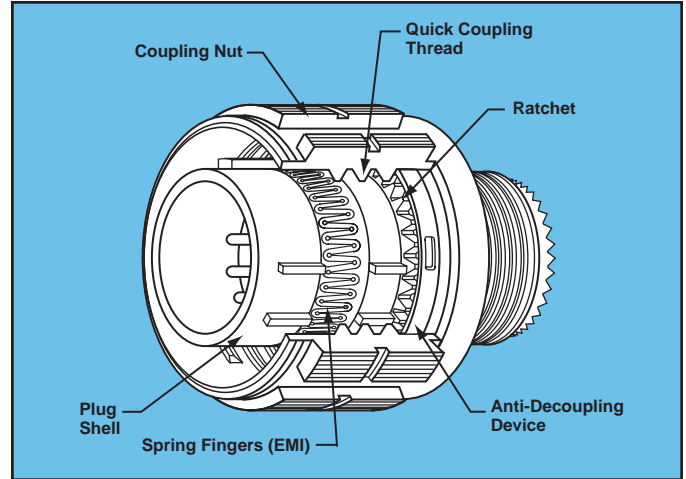
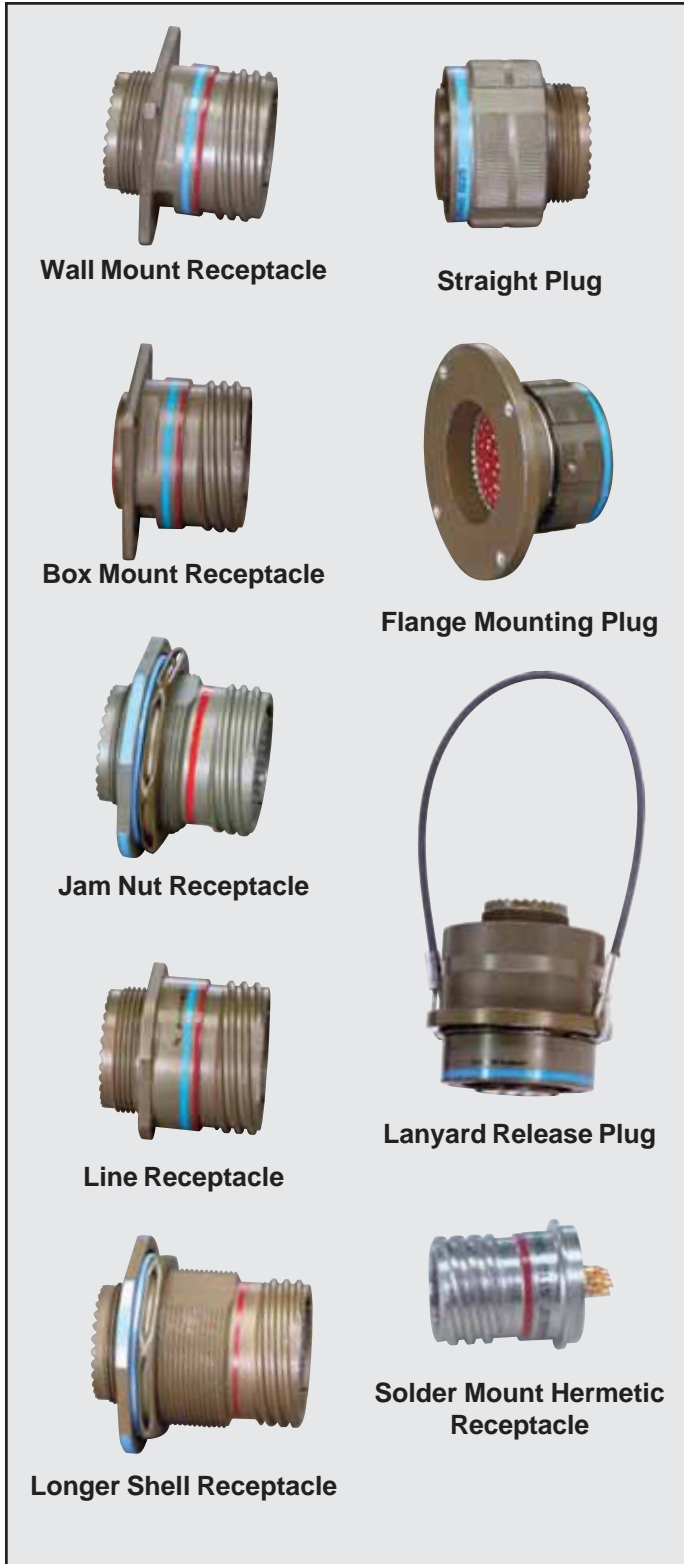


**D38999 with Flex
Termination for
Attachment to PCB
Boards**



**D38999 with PC Tail
Coax Contacts and
Alignment Disc**

Amphenol® Tri-Start shell styles and key design features



Designed for Performance

Numerous advantages in performance capability are designed into the Amphenol Tri-Start Connector. A positive metal to metal coupling design, grounding fingers, and electroless nickel plating provide superior EMI shielding capability of 65 dB minimum at 10 GHz.

Acme threads provide coupling durability. Thicker wall sections and a greater coupling surface area improve strength and shock resistance. Blunting of the thread on both the coupling nut and receptacle eliminates cross coupling. The connector quickly mates and self locks in a 360° turn of the coupling nut.

Elongated mounting holes permit the Tri-Start Connector to intermount with various existing MIL-spec box or wall mount receptacles, giving it a design replacement advantage.

Shells of stainless steel, or cadmium over nickel plating prevent severe corrosion. Resistance is tested through exposure to a 500 hour salt spray. Composite versions provide protection from salt spray exposure for 2000 hours. Other finish options are available; see how to order Tri-Start metal and Tri-Start Composite.

Recessed pins minimize potential contact damage in this 100% scoop-proof connector. In a blind mating application, mating shells cannot “scoop” the pins and cause a shorting or bending of contacts.

The design of the Amphenol Tri-Start interfacial seal meets the MIL-DTL-38999 Series III requirements for electrolytic erosion resistance.

A rigid dielectric insert with excellent electrical characteristics provides durable protection to the contacts. The socket contacts are probe proof, and all contacts are rear removable. They are plated in the standard 50 micro inches minimum gold, with 100 micro inches as an option and are available in standard Tri-Start insert arrangements and special Pyle® insert arrangements in sizes 10 power, 12, 16, 20 and 22D contacts. Special insert patterns are also available with larger contacts in sizes 4 and 0.

Applicable Patents:
 Tri-Start™ Connector Patent 4,109,990.
 Composite Connector Patents:
 4,268,103; 4,648,670; 4,682,832; 4,703,987.
 Clutch-Lok® Patent 6,152,753.