

ML-XT™ SEALED CONNECTION SYSTEM

BETTER DESIGN >
BETTER PERFORMANCE



molex®

MOLEX ML-XT™

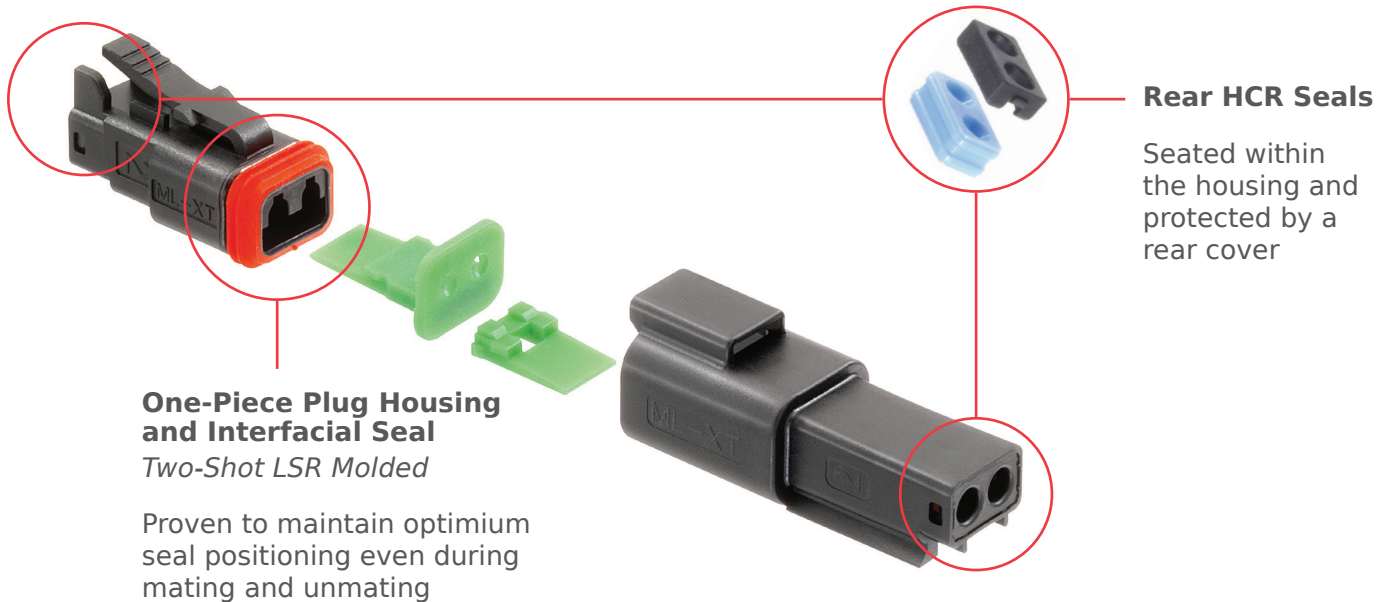
SEALED CONNECTION SYSTEM

Featuring innovative, high-performance seal technology for all your commercial vehicle applications, no matter how harsh the conditions.



ML-XT™

CONNECTOR SYSTEM



Today's complex vehicles include more connectors than ever before. With greater intricacy comes a higher risk of failure, as one compromised seal on a single connector can result in the failure of an entire system. Harsh environments place even greater demands on connectors and their seals.

OEMs are driving global standards to no longer accept poor reliability, nor should they need to budget time and money to replace seals before the final product even ships.

Molex has designed a better, more dependable connection solution, with innovative seals that can withstand the most rugged conditions demanded of commercial, military, marine and aeronautical applications.

The Molex ML-XT™ Sealed Connection System offers the most

reliably sealed system in the market today, preventing electrical failures in critical wiring applications.

Innovating the Sealed Connection System

Seals are a fundamental part of the connector system, and a vehicle's success depends on how those seals perform. Through everyday wear and harsh conditions, such as exposure to UV rays or corrosive chemicals, some seals can become brittle or loose, eventually losing optimum seal positioning. When seals are compromised, the resulting

electrical failures can cost you machinery downtime, re-engineering time and expenses, replacement seal costs — and worst, the trust of your end-customers.

The ML-XT™ connector system is different. After hearing from customers in numerous industries, Molex designed a sealed connection solution for the greatest commercial vehicle challenges. Advanced seal materials offer greater flexibility, leading to improved tear resistance, while a rear seal cover protects against water ingress.

FOR THE HARSHTEST CONDITIONS CHOOSE THE ML-XT™ SEALED CONNECTION SOLUTION

An Innovative, Proprietary Design

Molex engineers understood that developing a sealed connection system that could reliably withstand the toughest conditions meant taking a multi-dimensional approach. The result is an advanced design that works with current standard industry tooling and our own tooling, while featuring several innovations:

LSR Plug Interfacial Seal

Premium grade liquid silicone rubber (LSR) material ensures the ML-XT™ connector system meets J2030 requirements for advanced sealing. The thermoplastic plug housing forms a covalent bond with the LSR seal, resulting in an extremely strong interlock. This prevents fluid ingress and seal loss or misalignment, even through repeated mating and unmating.

Plug and Receptacle Rear Seals

The rear seals of the ML-XT™ system are constructed of high consistency rubber (HCR), a more durable material that protects the seal from damage during terminal insertion or extraction. This rear seal is seated farther inside the connector and protected by the rear cover.

Integrated Rear Covers

Typical sealed connections of this type have exposed rear seals. When cable routed through the connector bends, the stress can cause the seal to pop off or fail.



The integrated rear cover on the ML-XT™ housing removes the bend radius from the seal. By seating the rear seal deeper into the connector the rear cover takes this stress, protecting the seal and preventing leak paths.

The housings of the ML-XT™ system are delivered with the seal and rear cover fully assembled as standard, rather than as a welded aftermarket add-on.

High-Quality Assembly

The ML-XT™ Sealed Connection System is assembled by high-speed, high-accuracy machines, with camera monitoring to confirm proper assembly. This reduces the risk of human error and ensures consistency while keeping costs down.

Secure Mating and Unmating

The plug housing includes an integral locking latch to ensure secure mating and electrical connection. Finger grips on the latch provide a ridged surface that provides for easier connection and disconnection even when fingers are wet, muddy or oily. With our range of ML-XT™ crimp terminals, lower insertion and withdrawal forces are experienced.

More Circuits for More Applications

As harnesses grow more complex, many OEMs need connectors with more circuits. Molex continues to offer one of the greatest ranges of circuit options, including an 18-circuit receptacle assembly, not available through other providers.

More Available Colors

Molex offers the ML-XT™ Sealed Connection System in a broad range of colors and an array of custom options, enhancing poka-yoke and removing the need for labeling of wires.





The Total Cost of Ownership

When designing a sealed connection system, it's essential to consider the entire cost of ownership for both you and your customer. Poor design and initial installation can cost you in several ways:

- **Downtime** - When a leak triggers a system failure, the entire machine often has to be taken out of service for hours or days while a seal is replaced. Occasionally, resultant engine damage must also be repaired, leading to even more downtime and cost.

- **Replacement Seals** - Missing or defective seals must be replaced, incurring costs for the new seal and installation.

- **Customer Loyalty** - If the seals in your connection system are prone to failure, your customers may look for a more reliable option.

A Higher Standard

The Molex ML-XT™ Connection System meets the strict stand-alone SAE J2030 standards that measure how heavy-duty electrical connectors endure a variety of conditions. While alternative connection systems in the market may fail some J2030 elements, the ML-XT™ Connection System passes every single stand-alone test.

Throughout design and manufacturing, Molex conducts its own rigorous high-accelerated life testing (HALT) to ensure its connectors continue to meet the highest standards in even the toughest environmental conditions. The ML-XT™ Connection System has survived and thrived in several conditions, including the Sahara Desert, mining equipment, seeding machines' exposure to nitrogen, aircraft de-icers with harsh chemicals and temperatures, and many other scenarios.

Fully Compatible

The Molex ML-XT™ Connection System is compatible with defacto-standard connectors in the industry.

Try the new custom Configurator and design the ML-XT™ Connection System that meets your needs. With an easy interface, you can configure the ML-XT™ solution that perfectly matches your application's requirements.

In the Configurator, select:

- Number of circuits, from 2 to 18
- Housing color/keying
- Plug assembly
- Cable gauge
- Wedgelocks (TPAs)
- Terminals
- Accessories



Tough applications for harsh environments.

COMMERCIAL VEHICLE

- Agricultural machines
- Construction and mining equipment
- Forest and garden equipment
- Generator sets (Gensets)
- Search, detection and navigation equipment
- Buses, coaches, caravans
- Material handling equipment

AUTOMOTIVE

- Cars
- Motorcycles



MILITARY VEHICLES

- Marine
- Aeronautical

SEALED APPLICATION EXAMPLES

- Sensors: electrical, fluid, velocity, magnetic, moisture, navigation, position angle, optical, pressure, proximity
- Engine control units (ECUs)
- Airbag control units (ACUs)
- Diagnostics
- Alternators
- Starters
- Air conditioning
- Lights, lamps
- Pumps
- Power steering modules
- Alarms, horns
- Infotainment and telematics
- Electric seats
- Brakes
- Hydraulics

The Molex Approach

At Molex, we take a multi-dimensional approach to develop complete and integrated solutions that turn your ideas into reality. With a global team that takes a collaborative approach, we can help you develop the solution and ensure your design and manufacturing cycle is smooth and seamless.

For full specifications or to begin configuring your own ML-XT™ connection solution, visit www.molex.com/link/mlxt.html