



**The rugged ML-XT™ connection system with market-leading high-performance seal technology is a cost-competitive solution offering superior reliability for critical vehicle-wiring applications in harsh environments**

Customers specifying low-circuit-count connectors for rugged harness applications in vehicles require a highly-reliable, securely sealed connection system to minimise electrical failures and prevent costly machinery downtime. This system needs to withstand high temperatures and harsh environments, including exposure to chemicals, at the lowest cost. The ML-XT™ system meets these needs with high-performing seal technology proven to prevent ingress of fluids under extreme conditions. Advanced two-shot LSR molded one-piece plug, and rear HCR seals with cover guards guarantee optimum seal positioning at all times, including during mating and unmating of the header and receptacle. The result is a cost-competitive solution that achieves superior reliability over de-facto, industry-standard systems.

## Features and Benefits

One-piece plug housing and seal design, permanently bonded by two-shot LSR (liquid silicone rubber) molding technology

Prevents fluid ingress; system is IP68-rated and J2030 power-wash test capable. Prevents loss/ misalignment of seal; ensures repeatable retention during unmating and mating of plug and receptacle

Rear seals made from HCR (high consistency rubber)

Provides greater tear-resistance over LSR material; prevents damage to rear seal during terminal insertion/ extraction

Latched rear covers

Locks in rear HCR seals  
Allows for flexible cable exits and cable movement whilst maintaining optimum seal position to prevent leak paths

Plug and receptacle housings are supplied pre-assembled with internal HCR rear seals locked-in by rear covers

Reduces inventory, assembly time and costs for harness manufacturers and prevents loss of rear seals for a cost-competitive mated system

Utilises Molex proven XRC™ terminals with current ratings up to 13.0A

Supports tooling widely used at harness makers

High terminal retention force; exceeds 111N

Withstands high axial pull-out forces per J2030 specification

WedgeLock / TPA (Terminal Position Assurance) loaded after terminals

Locks terminals in position for secure electrical contact

Plug housing features integral locking latch

Ensures secure mating of plug and receptacle

9 colour-coded housings available

Enables easy visual mating of harnesses to prevent mis-mating

## ML-XT™ Sealed Connection System

**93444** Receptacle

**93447** Receptacle

WedgeLock (TPA)

**93445** Plug

**93448** Plug WedgeLock (TPA)



2-Circuit ML-XT™ System



4-Circuit ML-XT™ System



6-Circuit ML-XT™ System



18-Circuit ML-XT™ System

## Applications

### Commercial Vehicle

Agricultural machines  
Construction and mining equipment  
Forest and garden equipment  
Generator sets (Gensets)  
Search, detection and navigation equipment  
Trains and rail equipment  
Bus, coach, caravan  
Material handling equipment

### Automotive

Cars  
Motorcycles

### Sealed applications

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

## ML-XT™ Sealed Connection System

### Military vehicles

### Marine

### Aeronautical

Commercial Aviation



Construction Machinery & Equipment



Mining Machinery & Equipment



Automotive



Motorcycle



Rail



Commercial Aviation



Marine



Bus / Coach



Truck / Lorry



Agricultural Machinery & Equipment





## ML-XT™ Sealed Connection System

### Specifications

#### REFERENCE INFORMATION

Packaging: Bags in Boxes  
Terminal: XRC™ series 84525, 84524  
Designed In: Millimeters RoHS: Yes  
Halogen Free: Yes  
Cable Gauges:  
1.40 to 2.80mm  
2.70 to 3.60mm

#### ELECTRICAL

Voltage (max.): 500V DC  
Current (max.): 13.0A  
Contact Resistance:  
30 milliohm max.  
Insulation Resistance:  
20 Megaohms min.

#### MECHANICAL

Contact Retention to Housing:  
111N min.  
Mating Force: 135N max.  
Unmating Force: 135N max.  
with latches disengaged  
Durability (min.): 100 cycles

#### PHYSICAL

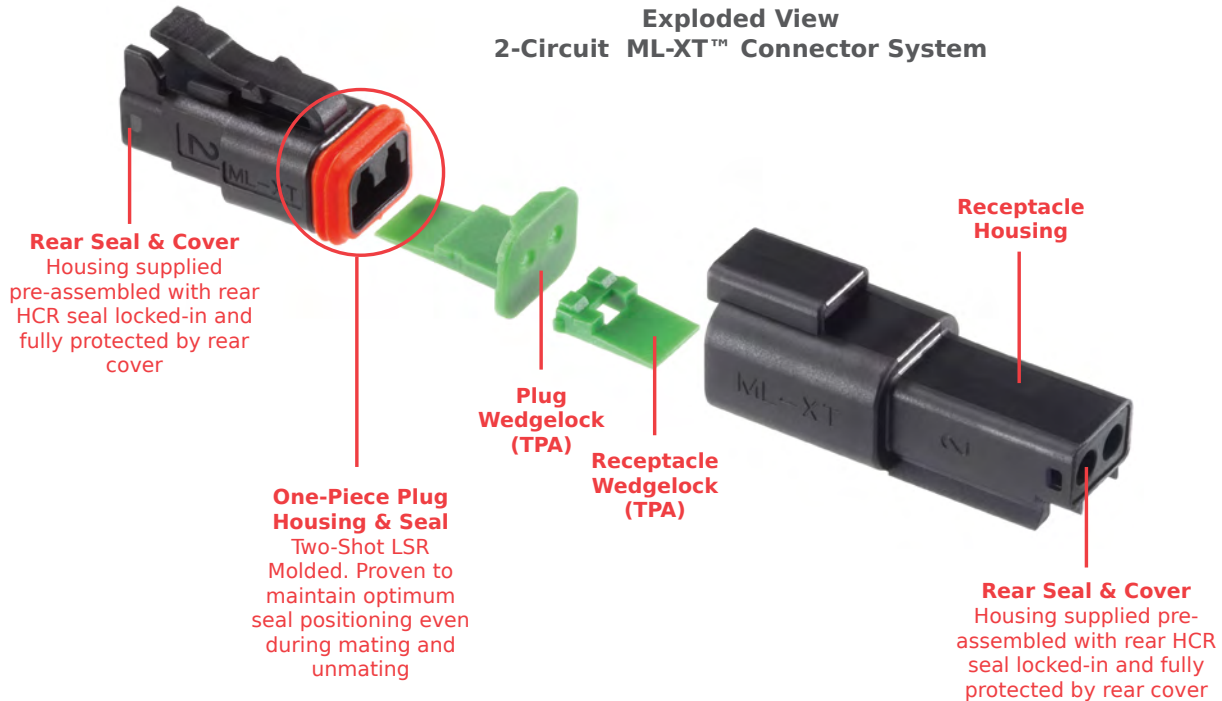
Housing: Nylon  
Seal: LSR  
Contact:  
Plating:  
Contact Area —  
Nickel (Ni) or Gold (Au)  
Solder Tail Area — Tin (Sn)  
Underplating — Nickel (Ni)

Operating Temperature:  
-55 to +125°C

Sealed rating: IP68 and J2030  
power-wash test capable

### Technical Information

#### Exploded View 2-Circuit ML-XT™ Connector System



4-Circuit ML-XT Connector System



6-Circuit ML-XT Connector System



18-Circuit ML-XT Connector System

| Circuits | Colour Coding*<br>(Housings) | Cable Gauge<br>Accepted by Seal | Order No.               |                                         | Order No.      |                                |
|----------|------------------------------|---------------------------------|-------------------------|-----------------------------------------|----------------|--------------------------------|
|          |                              |                                 | Receptacle<br>Assembly‡ | Wedgelock<br>for Receptacle<br>(Green†) | Plug Assembly‡ | Wedgelock<br>for Plug (Green†) |
| 2        | Black                        | 1.40 to 2.80mm                  | 93444-1101              | 93447-1003                              | 93445-1101     | 93448-1003                     |
|          |                              | 2.70 to 3.60mm                  | 93444-1201              |                                         | 93445-1201     |                                |
|          | Grey                         | 1.40 to 2.80mm                  | 93444-1102              |                                         | 93445-1102     |                                |
|          |                              | 2.70 to 3.60mm                  | 93444-1202              |                                         | 93445-1202     |                                |
| 4        | Black                        | 1.40 to 2.80mm                  | 93444-3101              | 93447-3003                              | 93445-3101     | 93448-3003                     |
|          |                              | 2.70 to 3.60mm                  | 93444-3201              |                                         | 93445-3201     |                                |
|          | Grey                         | 1.40 to 2.80mm                  | 93444-3102              |                                         | 93445-3102     |                                |
|          |                              | 2.70 to 3.60mm                  | 93444-3202              |                                         | 93445-3202     |                                |
| 6        | Black                        | 1.40 to 2.80mm                  | 93444-4101              | 93447-4003                              | 93445-4101     | 93448-4003                     |
|          |                              | 2.70 to 3.60mm                  | 93444-4201              |                                         | 93445-4201     |                                |
|          | Grey                         | 1.40 to 2.80mm                  | 93444-4102              |                                         | 93445-4102     |                                |
|          |                              | 2.70 to 3.60mm                  | 93444-4202              |                                         | 93445-4202     |                                |
| 18       | Black                        | 1.40 to 2.80mm                  | 93444-7111              | N/A                                     | 93445-7111     | N/A                            |

The ML-XT™ Connector System utilizes proven Molex XRC™ Terminals. Please refer to [molex.com](http://molex.com) for terminal ordering information.

### Notes:

‡ Receptacle and plug assemblies include housing + rear seal locked-in by rear cover. Supplied pre-assembled.

\*Colour-coding: Additional colour-coded housings available (volume dependent). Contact Molex.

†Wedgelocks: Green = standard coding. For other colour codings contact Molex.

## PLUGS AND RECEPTACLES

## WEDGELOCKS (TPA)

