



**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
Wedglock / 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 Wedglock (TPA)
- 93445** Plug
- 93448** Plug Wedglock (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



### 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

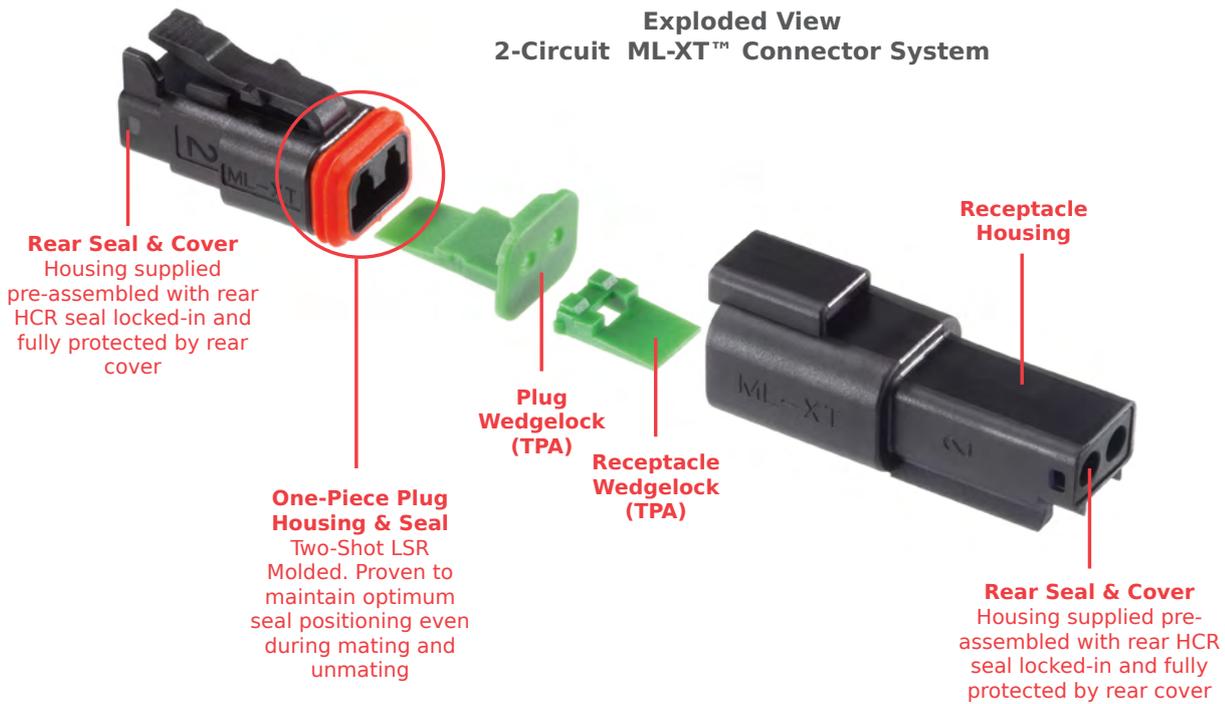
Housing: Nylon  
 Seal: LSR  
 Contact:  
 Plating:  
 Contact Area —  
 Nickel (Ni) or Gold (Au)  
 Solder Tail Area — Tin (Sn)  
 Underplating — Nickel (Ni)

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

### Ordering Information

Circuits	Colour Coding* (Housings)	Cable Gauge Accepted by Seal	Order No.		Order No.	
			Receptacle Assembly‡	Wedgelock for Receptacle (Green)†	Plug Assembly‡	Wedgelock 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)



**Series No.**

93444 = Receptacles  
93445 = Plugs

**X = Circuit Size:**

1 = 2 Circuits  
3 = 4 Circuits  
4 = 6 Circuits  
7 = 18 Circuits

**X = Assembly Options** (Cable Gauge accepted by Seal):

1 = 1.40 to 2.80mm  
2 = 2.70 to 3.60mm

Contact Molex for heatshrink housing options

**XX = Colour:**

01 = Black  
02 = Grey  
03 = Green  
04 = Blue  
05 = Yellow  
06 = White  
07 = Brown  
08 = Orange  
09 = Red



**Series No.**

93447 = Wedgelock for Receptacle  
93448 = Wedgelock for Plug

**X = Circuit Size:**

1 = 2 Circuits  
3 = 4 Circuits  
4 = 6 Circuits

**XX = Colour:**

01 = Green