

MX150 PASS-THROUGH SEALED CONNECTORS

MX150 Pass-Through Sealed Connectors enable the next generation of high-performance electric motors by using the rugged and proven MX150 connector design to provide an oil-resistant connection for signal wiring to the inside of oil-cooled motors.

NPI ENHANCEMENT
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Key Product Information

Category: Sealed Panel-Mount Connectors

Standards: GMW3191

Seal Rating: IP6K9K, GMW3191-S3

Vibration Rating: GMW3191-V5

Voltage (max.): 14V DC

Configuration: 12-circuit, dual-row, stackable

Operating Temperatures: -40 to +125°C



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Landing Page](#)

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Series

300081

**12-Circuit MX150 Pass-Through Sealed Headers
and Receptacles**

VITAL PRODUCT INFORMATION



What makes this product different from the competition?

MX150 Pass-Through Sealed Connectors are unique in that they offer a two-ring seal that improves reliability through redundancy when compared with single-ring seals on other connectors. The design is also priced competitively and incorporates the field-tested and proven MX150 form factor for assured reliability.

How does this product create value for our customers?

By using MX150 Pass-Through Connectors, customers can upgrade to the latest high-performance, high-efficiency, oil-cooled electric motors with rugged and reliable electrical connections that are cost-effective and ensure consistent connectivity.

What is the Molex Advantage?

Deep expertise in meeting automotive industry challenges and requirements gives Molex engineers a collaborative mindset and the knowledge to create innovative next-generation solutions that optimize electronics architecture and help enable electrification.

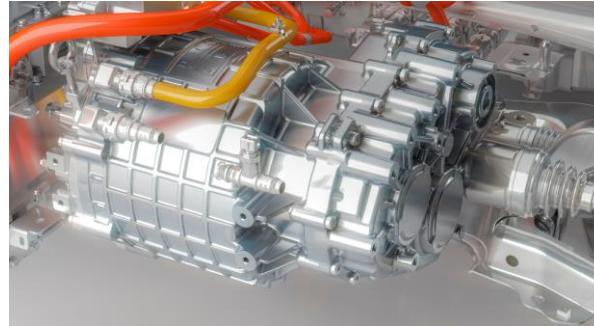
PRODUCT OVERVIEW

Oil-Resistant Connections for Next-Generation Motors

MX150 Pass-Through Sealed Connectors are IP6K9K-rated and oil-resistant to help enable the next generation of high-performance, high-efficiency, oil-cooled motors while using the rugged and field-tested MX150 form factor.



MARKETS AND APPLICATIONS



Oil-Cooled Electric Motors

Automotive

- Oil-cooled electric motors
- Resolver/transformer sensors
- Negative temperature coefficient (NTC) temperature sensors

FREQUENTLY ASKED QUESTIONS

How does Molex's connector design provide superior sealing performance?

1. The design uses potting in the terminal interface.
2. The unique two-ring seal option delivers redundancy when compared with typical single-ring sealed connectors.
3. The two-lip ring seal design provides a more reliable seal.
4. The anti-oil seal is designed specifically for oil-cooled motor applications.

Why do MX150 Pass-Through Sealed Connectors use a stackable 2 by 3 connector design?

The stackable design includes a connector for the temperature sensor assembly and a connector for the rotary transformer assembly. With other designs, these sub-assemblies are provided by different suppliers. With MX150 Pass-Through Connectors, the combined design provides procurement flexibility and helps reduce supply chain risks.

SOLVING INDUSTRY CHALLENGES

Industry Need	Industry Challenge	Industry Solution	Anticipated Results
High reliability for next-generation electric motors	Customers want to meet the market demand for more powerful, higher-performance motors using oil cooling and need electrical connectivity that will work with these designs.	MX150 Pass-Through Sealed Connectors are designed to enable oil-cooled electric motor technology through a sealed, oil-resistant design.	Manufacturers can use electrical connectors with the proven MX150 form factor in oil-cooled motor applications, enabling motor technology upgrades and reliable electrical connectivity.

PRODUCT ADVANTAGES AND FEATURES

Enables reliable connection to the inside of oil-cooled electric motors using an IP6K9K-rated seal that is oil-resistant for use in next-generation, high-performance, oil-cooled motors

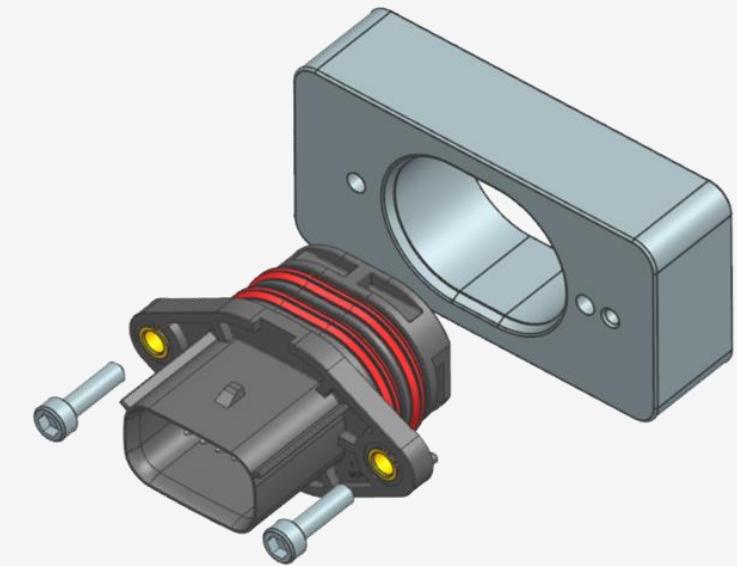
Provides a stackable connector design for 2 by 6 connectivity simplifying assembly in Negative Temperature Coefficient (NTC) thermistor and rotary transformer assembly applications

Offers a redundant sealing system to prevent oil or moisture ingress by using an available two-ring seal option and terminal potting to provide extra sealing protection

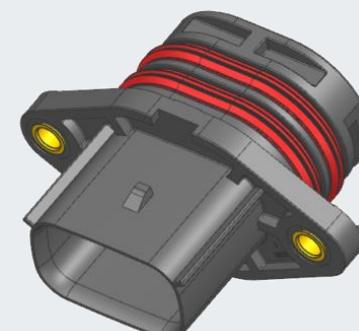
Delivers rugged and reliable operation in harsh environments subject to vibration and shock by utilizing the field-proven MX150 form factor and Silver-plated terminals for more robust, vibration-resistant electrical performance

Helps ensure quick and accurate mating operations by offering polarization and four keying options in different housing colors for error-free assembly

Key Specifications	
Standards	GMW3191
Seal Rating	IP6K9K, GMW3191-S3
Vibration Rating	GMW3191-V5 ISO 16750-3 Test 2
Voltage (max.)	14V DC
Configuration	12-circuit, dual-row, stackable
Operating Temperatures	-40 to +125°C



UNIQUE AND USEFUL DIFFERENTIATION VS. SIMILAR MOLEX PRODUCTS

	Molex MX150 Sealed Connectors	Molex MX150 Pass-Through Sealed Connectors
Sample Series Number	47725	300081
Terminals	1.50mm	1.50mm
Circuit Count	6, 12	12
Current (max.)	22.0A	12.0A
Mounting Feature	Self-tapping	Bushing
Seal Between Connector and Terminal	No mat seal	Potting seal
Seal Between Connector and Panel	Gasket seal	Ring seal
Motor Application	Air- or water-cooled motors	Oil-cooled motors
Product Image		

SPECIFICATIONS AND SUPPORTING INFORMATION

Reference Information

Packaging: Housings – packed in trays
Interface: USCAR 2x6 1.5mm interface (outside), MX150 2x3 + 2x3 (inside)
Mates With: Series 33472, 160074, 160092
Use With Terminals:
Series 33001 (Silver-plated)
Flammability: UL 94 HB
Designed in: Millimeters

Electrical

Voltage (max.): 14V DC
Current (max.): 12.0A
Contact Resistance (max.): 8 milliohms
Dielectric Withstanding Voltage: 1,000V AC
Insulation Resistance (min.): 100 Megohms at 500V DC

Mechanical/Electrical/Sealing

Durability: 8 milliohms max. at 10 cycles
Sealing: GMW3191 Class 3 and IP6K9K
Vibration: GMW3191 2019 Class V5, transmission ISO 16750-3 Test II – passenger car, gearbox
Temperature: GMW3191 2019 Class 3

Physical

Housing: Glass fiber-filled nylon 66
Seal: AEM rubber
Contact: Copper Alloy
Plating:
Contact area—Silver
Underplating—Nickel
Wire Gauge:
ISO wire: 0.35 to 0.50mm²
Insulation Diameter: 1.20 to 1.60mm
Operating Temperatures: -40 to +125°C

Additional Resources

Web Overview Page	http://www.molex.com/en-us/products/automotive-connectivity/automotive-pcb-wire-connectors/mx150-connectors
Datasheet	987651-0761.pdf (molex.com)
Global Product Manager	Seven Zhu, TSBU, TIS



THANK YOU

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