MX150™ Sealed Connector System 3.50mm (.138") Pitch

33471 Single-Row Receptacles
33472 Dual-Row Receptacles
33481 Single-Row Connectors
33482 Dual-Row Connectors
33476 Hybrid Receptacles
33486 Hybrid Connectors
34345 Cavity Plug
33001, 33012 Female Terminals
33000, 33011 Male Blade Terminals

The pre-assembled, submersible MX150 is a high-performance connector system ideal for SAE-style wire in single- and dual-row configurations for challenging, rugged and harsh applications

The MX150 Sealed Connector System is designed to meet the need for a rugged, environmentally sealed connector system supporting both low-level signal and power applications up to 22.0A. Designed for on-engine automotive to off-road construction equipment applications, the MX150 Sealed Connector System's reduced package size is ideal for typical SAE-style wire.

The innovative matte-sealed connector is based upon the 1.50mm (060) ISO blade-type terminal system, available with pre-Tin, selective Gold and pure Silver contact finishes. This design eliminates the need to purchase, handle and crimp individual wire seals to lower applied cost. The matte-seal design is a single silicone-based seal with individual wire openings and a seal cap to protect, securely retain and provide strain relief to the seal. The cost-effective connector design features all-in-one plug and receptacle housings with pre-assembled, wire and interfacial connector seals. Integral terminal position assurance (TPA) and optional connector position assurance (CPA) components eliminate time-consuming and costly assembly operations. Completing the application is as simple as crimping the appropriate terminal, inserting the crimped terminal lead and seating the TPA to its final lock position. No additional components are required.

Tooling solutions include FineAdjust™ crimp-press applicators for high-volume production, as well as hand tools for low-volume production and field repairs.

For additional information on Molex's MX150 product offering, visit: http://www.molex.com/ind/mx150.html.



Features and Benefits

- Reduced 3.50mm (.138") pitch housing design supports single-row configurations for 2, 3, 4, 5 and 6 circuits and dual-row configurations for 4, 6, 8, 12, 16, 20 and 16 circuit hybrid
- Pre-assembled housing, seal, TPA components and matte-seal connector shipped as single assembly for applied labor and cost savings protective matte-seal cap protects, securely retains and provides strain relief to wire seal interface
- Protective matte-seal cap protects, securely retains and provides strain relief to wire seal interface
- Unused circuits can be blocked using plastic seal plugs to facilitate flexibility of sealing unused circuits without adding complexity to part numbers and customer inventory
- Simple crimp, poke and plug design ensures no need to crimp individual wire seals
- Easy terminal extraction and insertion for quick, low-cost field repairs using common screw driver, needle nose pliers and terminal extraction tool
- High connector and terminal retention forces exceed USCAR-2 Rev 4 specifications and offer high reliability under extreme conditions
- Integral Terminal Position Assurance (TPA) assures that crimped terminal leads are properly locked into connector (TPA will not seat into final locked position and connector system will not latch if terminal is not locked properly into position)
- Integral locking latch with secondary, pre-loaded connector position assurance (CPA) option confirms positive mating of connector and proper latching (CPA will not move to final locked position if connector is not latched)
- Audible and tactile clicks on insertion, extraction and mating; feedback facilitates reliable mating and terminal loading and removal
- Superior electrical and mechanical performance capabilities surpass performance of most mature competitive products in the market
- Conforms to USCAR-20 (FCLT) / USCAR-2 Rev 4 / USCAR-21 for use in on-engine, high-vibration, under-hood and under-chassis applications at class 3 temperatures
- Integral, two-way matte and interfacial seals designed and tested to IEC IP67 and SAE USCAR-2, Rev 4 standards exceed "waterproof" demands as a true sealed connector system tested under submersed conditions in various fluids



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Reference Information

Packaging:
- Housings – Bulk Pack
- Terminals – Reel and loose piece

Mates With:
- Receptacles Series 33471, 33472, 33476
- Connectors Series 33481, 33482, 33486

Use With Terminals:
- Female Series 33001, 33012
- Male Series 33000, 33011

Designed in: Millimeters

Electrical

Voltage (max.): 500V
Current (max.): 22.0A
Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 1500V AC min.
Isolation Resistance: 20 Megohms min.

Physical

Housing: 30% Glass Filled Nylon, UL 94-HB
TPA: 20% Glass Filled SPS/Nylon Alloy
Contact: Copper (Cu) Alloy
Plating:
- Contact Area — Tin (Sn), Gold (Au) or Silver (Ag)
- Underplating — Nickel

Wire Gauge: 2.00 to 0.50mm^2 (14 to 22 AWG)
Insulation Diameter: 2.70 to 1.50mm (.106 to .059")
Operating Temperature: -40 to +125°C

Mechanical/Electrical/Sealing

Mating Force: Less than 75N (16.86 lb) max.
Unmating Force: Less than 75N (16.86 lb) max.
Connector Retention (Primary latch):
- 255N (57.33 lb) avg. (exceeds 110N (24.73 lb) min. USCAR requirement)

Contact Retention to Housing:
- 210N (47.21 lb) avg. (exceeds 90N (20.23 lb) min. USCAR requirement)

Contact Insertion Force Into Housing: 30N (6.74 lb) max.
Contact Insertion Force: 4.4N (1.0 lb) max.
Connector Audible Feedback: 7dB over ambient
Polarization Feature Effectiveness: 220N (49.46 lb) min.
FCLT (Class 3): 20 milliohms max.
Durability: 10 milliohms max.
- Tin (Sn) Plating – 25 Cycles
- Silver (Ag) Plating – 100 Cycles
- Gold (Au) Plating – 100 Cycles

Thermal Shock (class 3, 100 cycles): 10 milliohms max.
High Temperature Exposure:
- Pressure/Vacuum Immersion – 28 kPa (4psi) 30 minutes
- Isolation resistance – 20 Megohms @ 500V DC min.

Vibration: (USCAR-2 Rev 4) 10 milliohms max.
- Random "On-Engine" Profile: 118.7 mps^2 rms, 60 to 1,200 Hz
- Mechanical Shock: 343 mps^2, half-sine wave, 10 msec Pulse

Vibration: (GMW 3191) 10 milliohms max.
- Random "On-Engine" Profile: 170 mps^2 rms, 10 to 1,500Hz
- Sine "On-Engine" Profile: 280 mps^2 Pk,100-440 Hz
- Mechanical Shock: 245 mps^2, half-sine wave, 10 msec pulse

Sealing: (USCAR-2 Rev 4)
- Heat Soak Submersion: +125°C and submersion depth of 40.00cm (15.75") water
- Pressure/Vacuum Immersion: 48 kPa (7 psi)
- IEC 529, IP6K7
- Isolation Resistance: 20 Megohms @ 500V DC min.



APPLICATIONS

MX150™ Sealed Connector System
3.50mm (.138") Pitch

- Automotive Vehicles
- Commercial Vehicles
- Recreational Vehicles
- Industrial Vehicles and Equipment
- Construction Equipment
- Marine Equipment











ORDERING INFORMATION

Receptacles

Order No.	Rows	Circuit Size	Clip Slot
33471-0201	1-by-2	2	Not Available
33471-030†	1-by-3	3	Not Available
33471-040†	1-by-4	4	Not Available
33471-0501	1-by-5	5	Not Available
33471-060†	1-by-6	6	Not Available
33472-040†	2-by-2	4	Not Available
33472-060†	2-by-3	6	Not Available
33472-070†	2-by-3	6	Standard
33472-080†	2-by-4	8	Not Available
33472-090†	2-by-4	8	Standard
33472-120†	2-by-6	12	Not Available
33472-130†	2-by-6	12	Standard
33472-160†	2-by-8	16	Not Available
33472-200†	2-by-10	20	Not Available
33476-160†	2-by-8 Hybrid	16	Not Available

† Denotes polarization, housing color and CPA information:

1 = A, Black, no CPA; 2 = B, Light Gray, no CPA; 3 = C, Brown, no CPA; 4 = D, Green, no CPA; 6 = A, Black, CPA; 7 = B, Light Gray, CPA; 8 = C, Brown, CPA; 9= D, Green, CPA

ORDERING INFORMATION

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Connectors

Order No.	Rows	Circuit Size	Clip Slot
33481-030*	1-by-3	3	Standard
33481-040*	1-by-4	4	
33481-0501	1-by-5	5	
33481-060*	1-by-6	6	
33482-040*	2-by-2	4	
33482-060*	2-by-3	6	
33482-080*	2-by-4	8	
33482-120*	2-by-6	12	
33482-160*	2-by-8	16	
33482-200*	2-by-10	20	
33486-160*	2-by-8 Hybrid	16	

* Denotes polarization and housing color: 1 = A, Black; 2 = B, Light Gray; 3 = C, Brown; 4= D, Green

Female Terminals

Order No.	Plating	Wound Direction/Payoff Direction
33012-200*	Tin	B / Right
33012-300*	Tin	D/ Left
33001-200†	Gold	B / Right
33001-300†	Gold	D/ Left
33001-400*	Silver	B / Right
33001-500*	Silver	D/ Left

Denotes SAE-Style Wire Gauge (AWG):
*1 = 14, 16; 2 = 18, 20; 3= 22
†3 = 14, 16; 4 = 18, 20; 5 = 22

Cavity Plug – Sealed

Order No.	Gender
34345-0001	Male/Female

Male Blade Terminals

Order No.		Plating	Wire Gauge (AWG)
Right Payoff, B Wound	Left Payoff, D Wound		
33000-0001	33000-1001	Tin	14
33000-0002	33000-1002		16 to 20
33000-0003	33000-1003		22
33011-1002	33011-0002	Gold	14
33011-1004	33011-0004		16 to 20
33011-1006	33011-0006		22
33011-2001	33011-3001	Silver	14
33011-2002	33011-3002		16 to 20
33011-2003	33011-3003		22

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