Molex’s sealed MX 120G™ connectors offer greater cost and space savings while providing superior design and mating features to meet the needs of environmentally challenging automotive and non-automotive applications.

Developed and currently being validated for use in under-hood automobile applications, the MX 120G connector system is a sealed, compact wire-to-wire and wire-to-board family of interconnects with IP67-ratings, that delivers optimal performance especially in wet, high-vibration and wide-operating-temperature conditions.

Designed for use in rugged automotive Powertrain, Body Electronics, Safety or Chasis and non-automotive applications, this family of interconnects is easy-to-use and is a less costly drop-in replacement of wire-seal equivalents. The MX 120G wire-to-wire and wire-to-board receptacles feature a single-piece pre-assembly that comprises high-temperature connector housing, matte silicone seal and a seal cap for strain relief and easy crimp-lead insertion.

The terminals of this receptacle have FLRY-B* wire-sizes of 0.35 to 1 sq. mm conductor diameter allowing the receptacle to take multiple cable configurations, for added flexibility.

The MX 120G through hole male header has a 3.5mm soldertail pitch to ensure sufficient space for PCB traces to support 7 to 10.5 Amp of current over a range of FLRY-B wire sizes. The connector’s built-in positive locking feature gives robust terminal retention and prevents any accidental terminal back-out. Its unique twist-lock feature ensures proper terminal alignment of the header contacts with those of the female receptacle to eliminate the need for any fasteners.

The use of various color coding of each component of the product assembly facilitates easy identification of mating connector in final assembly. Although this product does not meet all USCAR requirements, its superb product and performance features are able to satisfy the needs of mid-range type vehicles that require an economical yet viable interconnect solution.

Find out more at: www.molex.com/link/mx120g.html

* FL – Automotive Wire  
R – Reduced Thickness of Insulation  
Y – PVC Insulation  
Refer to “Current and Applicable Wires” Table on page 2

**FEATURES AND BENEFITS**

- Reduced 3.20mm (mating) pitch design offers significant space reduction for the same circuit density offered by some other makes
- Meets IP67 ratings with wide operating temperature range from -40 to +105°Celsius
- High-vibration resistance up to 10G acceleration secures mating retention in high-vibration environment and applications
- Independent, primary terminal lock feature of the through hole, right angle male header provides reinforced terminal retention to receptacle housing to prevent accidental terminal back-out
- Twist-lock feature on the terminal and connector prevents rotation of terminal once inserted into the connector and ensures correct alignment of male terminals with receptacle contacts when mated. It also eliminates the need for additional fasteners
- Single-piece construction of the female receptacle comprising a pre-assembled connector housing with matte silicone seal and seal-cap provides greater applied labor and process cost savings
- Silicone seals are more durable and able to withstand higher temperatures than ordinary Nitrile-rubber seals
- Seal-cap provides strain relief for the seal interface; enables easy insertion of crimped wires directly into the connector
- Mounted male header comes with a self-guiding slot for easy assembly into the ECU (Engine Control Unit) box and facilitates easy assembly and subsequent potting

---

**PRELIMINARY DATASHEET**

**MX 120G™ Sealed Wire-to-Wire and Wire-to-Board Connectors, IP67-rated**

- **36783** Wire-to-Board Sealed Interconnects Wire-to-Wire Female Crimped Terminal
- **36790** Wire-to-Wire Male Crimped Terminal
- **36791** Wire-to-Wire Male Plug with Matte Seal and Seal Cap
- **36792** Wire-to-Wire Female Receptacle with Matte Seal, Seal Cap and Interface Seal

---

**MX 120G Sealed Wire-to-Board Connectors**

**MX 120G Sealed Wire-to-Wire Connectors**
**MX 120G SEALED WIRE-TO-WIRE CONNECTOR CONFIGURATION**

Mating configuration of a typical sealed MX 120G™ wire-to-wire assembly (exploded view)

- Male Terminal (Series 36790)
- Seal (or Grommet) Cap for Male Terminal (Series 36791)
- Matt Silicone Seal for Male Terminal (Series 36791)
- Male Plug (Series 36791)
- Interface Seal (Series 36792)
- Female Receptacle Housing (Series 36792)
- Matt Silicone Seal for Female Terminal (Series 36792)
- Seal (or Grommet) Cap for Female Terminal (Series 36792)
- Female Terminal (Series 36783)

Note: Molex offers wire-to-wire male plugs with void options for circuit sizes smaller than 12.

**MX 120G SEALED WIRE-TO-BOARD CONNECTOR CONFIGURATION**

Mating configuration of a typical 2-by-6 circuit, sealed MX 120G™ wire-to-board assembly (exploded view)

- Female Terminal (Series 36783)
- Seal Cap (Series 36783)
- Matte Silicone Seal (Series 36783)
- Female Receptacle Housing (Series 36783)
- Ring Seal (Series 36783)
- Through Hole Right Angle Male Header (Series 36783)

Note: Molex offers wire-to-board male plugs with void options for circuit sizes smaller than 12.

**Current and Applicable Wires**

<table>
<thead>
<tr>
<th>Current Wire</th>
<th>(FLRY-B)</th>
<th>Outside Insulation Diameter (FLRY-B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Amps</td>
<td>0.35 sq. mm</td>
<td>1.2 to 1.4mm</td>
</tr>
<tr>
<td>8 Amps</td>
<td>0.50 sq. mm</td>
<td>1.4 to 1.6mm</td>
</tr>
<tr>
<td>9 Amps</td>
<td>0.75 sq. mm</td>
<td>1.6 to 1.9mm</td>
</tr>
<tr>
<td>10.5 Amps</td>
<td>1.00 sq. mm</td>
<td>1.9 to 2.1mm</td>
</tr>
</tbody>
</table>
ADDITIONAL PRODUCT FEATURES

Guiding slots to facilitate mounting of the header to the ECU box

Rear view of a sealed MX 120G male header mounted on an ECU box

Locking ramp

Polarization features for mating to receptacle

Cross-shaped PCB mounting pegs

Mating interface of a PCB-mounted MX 120G male header

APPLICATIONS

- Transportation
  - Motorcycles and scooters
  - Commercial, industrial and recreational vehicles
  - Marine transportation
- Industrial
  - Construction equipment
  - Marine equipment
  - Oil and gas installations
- Medical
  - Splash-proof medical equipment

Motorcycles and scooters

Recreational vehicles

Marine Transportation

www.molex.com/link/mx120g.html