MX123™ Sealed Connection System

Designed for transportation power-train applications requiring reliable connections in high-vibration under-the-hood environments, the MX123™ Sealed Connection System offers a rugged, fully-sealed interface with the smallest packaging size in the industry.

**Features and Benefits**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMW3191 specifications</td>
<td>Designed specifically for high-vibration under-the-hood applications. Meets IP67, IP68 and IP69k sealing specs, Temp Class III operating temperature specs and Vibe Class I vibration specs.</td>
</tr>
<tr>
<td>Matte-seal technology</td>
<td>Allows closer center-to-center terminal spacing, which reduces packaging size to the smallest in the industry. Eliminates the need for crimping individual cable seals. Reduces harness-assembly complexity.</td>
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<tr>
<td>Center-wall feature</td>
<td>Prevents scooping. Extends past the length of the terminals to enable connection in blind-mate conditions.</td>
</tr>
<tr>
<td>Header terminal filtering</td>
<td>Eliminates cross talk between adjacent circuits in up-integrated systems.</td>
</tr>
<tr>
<td>Six unique mechanical polarization options and unique color coding</td>
<td>Offers the ability to use multiple connectors on one module while eliminating the risk of cross-mating incorrect connectors.</td>
</tr>
<tr>
<td>PCB tail customization: solder-tail or compliant-pin technology</td>
<td>Enhances PCB design flexibility.</td>
</tr>
<tr>
<td>Two wire-dress options</td>
<td>Creates flexibility in wire-routing design with both 0° and 180° orientations.</td>
</tr>
<tr>
<td>Precious-metal plating</td>
<td>Stabilizes contact resistance under severe temperature and vibration conditions.</td>
</tr>
</tbody>
</table>

**Applications**

Automotive and Commercial Vehicle
- Powertrain Modules
- (Engine and Transmission Control)
- Safety and Chassis
- Body and Interior

Up-Integrated Engine-Control Module with Headers and Connected Receptacles
# MX123™ Sealed Connection System

## Specifications

**REFERENCE INFORMATION**

- **Packaging:**
  - Vertical Headers: Tray
  - Lever Receptacles: Cell-Pack Partition
  - Wire Dress Covers: Bulk
  - Terminals – Reel

- **Mates With:**
  - 66-, 73- and 80-Circuit: Headers (Series 31387) mate with Receptacle (Series 34566)
  - 56-Circuit: Header (Series 31386) mates with Receptacle (Series 34576)

- **Use With, Terminals:**
  - MX64: 0.64mm (.025") (Series 33467 and 34736)
  - Yazaki 2.80mm (.110")

- **Designed In:** Millimeters

**MECHANICAL**

- **Mating Force:** Less than 75N (16.9 lb)
- **Unmating Force:** Less than 75N (16.9 lb)
- **Connector Retention (Primary Latch):**
  - 2.80mm (.110") — 90N (20.2 lb) min.
  - 0.64mm (.025") — 75N (16.9 lb) min.

- **Contact Insertion Force Into Housing:**
  - 2.80mm (.110") — 15N (3.4 lb) max.
  - 0.64mm (.025") — 5 milliohms max.

- **Polarization Feature Effectiveness:**
  - 2.80mm (.110") — 5 milliohms max.
  - 0.64mm (.025") — 15 milliohms max.

- **Durable — 10 Cycles:**
  - 2.80mm (.110") — 5 milliohms max.
  - 0.64mm (.025") — 15 milliohms max.

- **Durability — 10 Cycles:**
  - 2.80mm (.110") — 5 milliohms max.
  - 0.64mm (.025") — 15 milliohms max.

- **Contact Retention to Housing:**
  - 2.80mm (.110") — 90N (20.2 lb) min.
  - 0.64mm (.025") — 75N (16.9 lb) min.

- **Contact Insertion Force Into Housing:**
  - 2.80mm (.110") — 15N (3.4 lb) max.
  - 0.64mm (.025") — 5 milliohms max.

- **Polarization Feature Effectiveness:**
  - 2.80mm (.110") — 5 milliohms max.
  - 0.64mm (.025") — 15 milliohms max.

**PHYSICAL**

- **Housing:** 30% Glass Filled SPS / Nylon Blend
- **PLR:** 30% Glass Filled SPS / Nylon Blend
- **Contact:** Copper (Cu) Alloy
- **Contact Plating:**
  - 2.80mm (2.54-4.06µm) — Tin (Sn)
  - 0.64mm (1.9-3.3µm) — Silver (Ag)
  - 0.64mm (0.76-1.5µm) — Gold (Au)
  - Underplating:
    - 2.80mm (1.27-2.54µm) — Nickel (Ni) for Sn overplate
    - 0.64mm (1.27-2.54µm) — Nickel (Ni) for Ag overplate
    - 0.64mm (1.27-2.54µm) — Nickel (Ni) for Au overplate

- **Operational Temperature:** -40 to +125 °C

### ELECTRICAL

- **Voltage (max.):** 14 VDC
- **Current (max.):**
  - 2.80mm (.110") — 25.0A @ 23°C
  - 0.64mm (.025") — 11.0A @ 23°C
- **Contact Resistance:**
  - 2.80mm (.110") — 5 milliohms max.
  - 0.64mm (.025") — 15 milliohms max.
- **DIELECTRIC WITHSTANDING VOLTAGE:** 1600VDC
- **ISOLATION RESISTANCE:** 100 Megohms min.
- **FLAMMABILITY:** <100mm/min

## Ordering Information

<table>
<thead>
<tr>
<th>Series No.</th>
<th>Component</th>
<th>Circuit Size</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>31386</td>
<td>Vertical Header</td>
<td>56</td>
<td>Gray, Blue</td>
</tr>
<tr>
<td>31387</td>
<td></td>
<td>66, 73, 80</td>
<td>66: Black, Blue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>73: Black, Gray, Blue</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>80: Gray, Blue</td>
<td></td>
</tr>
<tr>
<td>34566</td>
<td>Receptacles</td>
<td>73, 80</td>
<td>73: Black, Gray, Blue, Natural</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>80: Gray, Blue</td>
</tr>
<tr>
<td>34576</td>
<td></td>
<td>49, 56</td>
<td>49: Black, Blue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>56: Blue</td>
</tr>
<tr>
<td>34522</td>
<td></td>
<td>66</td>
<td>Black</td>
</tr>
<tr>
<td>34565</td>
<td>Wire-Dress Covers</td>
<td>66, 73, 80</td>
<td>Black</td>
</tr>
<tr>
<td>34575</td>
<td></td>
<td>49, 56</td>
<td></td>
</tr>
<tr>
<td>33467 (Gold)</td>
<td>MX64 Terminals</td>
<td>18 to 22 AWG (0.35, 0.50 and 0.75mm²)</td>
<td>0.64mm</td>
</tr>
<tr>
<td>34736 (Silver)</td>
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</tbody>
</table>

www.molex.com/link/mx123.html