

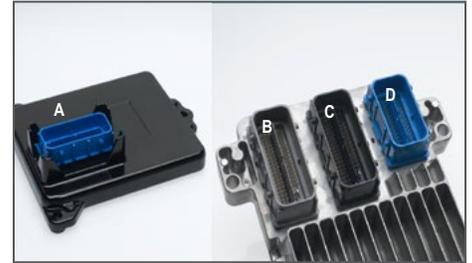
# MX123™ Sealed Connection System



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

GMW3191 specifications	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
Matte-seal technology	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
Center-wall feature	Prevents scooping. Extends past the length of the terminals to enable connection in blind-mate conditions
Integrated TPA and CPA components	Assists mating reliability. Protects against un-mating in high-vibration environments. Reduces assembly complexity
Header terminal filtering	Eliminates cross talk between adjacent circuits in up-integrated systems
Six unique mechanical polarization options and unique color coding	Offers the ability to use multiple connectors on one module while eliminating the risk of cross-mating incorrect connectors
PCB tail customization: solder-tail or compliant-pin technology	Enhances PCB design flexibility
Two wire-dress options	Creates flexibility in wire-routing design with both 0° and 180° orientations
Precious-metal plating	Stabilizes contact resistance under severe temperature and vibration conditions



MX123 Headers Mounted on a Under-Hood Engine Control Module A: 80-Circuit Header (Series 31387) B and C: 73-Circuit Header (Series 31387), D: 56-Circuit Header (Series 31386)

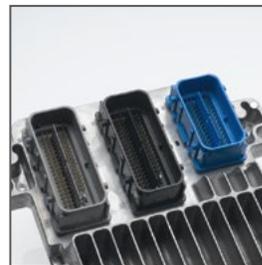


A: Up-Integrated Module (Custom from Molex) B: 73-Circuit Lever Receptacle (Series 34566)

## 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): 110N (24.7 lb) min.
- 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: 15N (3.4 lb) max.
- Polarization Feature Effectiveness: 220N (49.5 lb) min.
- Durability — 10 Cycles:
  - 2.80mm (.110") — 5 milliohms max.
  - 0.64mm (.025") — 15 milliohms max.
- TPA Insertion Force: 75N (16.9 lb) max.
- TPA Extraction Force: 120N (27.0 lb) max.
- CPA Insertion Force: 60N (13.5 lb) max. (unmated), 22N (5.0lb) max. (fully mated)
- CPA Extraction Force: 30N (6.7 lb) max.
- FCLT (Class 3): 20 milliohms max.
- Thermal Shock (Class 3, 300cycles):
  - 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
- Terminal Plating:
  - Contact Area:
    - 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
- Operating 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

Series No.	Component	Circuit Size	Color
<a href="#">31386</a>	Vertical Header	56	Gray, Blue
<a href="#">31387</a>		66, 73, 80	66: Black, Blue 73: Black, Gray, Blue 80: Gray, Blue
<a href="#">34566</a>	Receptacles	73, 80	73: Black, Gray, Blue, Natural 80: Gray, Blue
<a href="#">34576</a>		49, 56	49: Black, Blue 56: Blue
<a href="#">34822</a>		66	Black, Blue
<a href="#">34565</a>	Wire-Dress Covers	66, 73, 80	Black
<a href="#">34575</a>		49, 56	
		Wire Gauge	Size
<a href="#">33467</a> (Gold)	MX64 Terminals	18 to 22 AWG (0.35, 0.50 and 0.75mm <sup>2</sup> )	0.64mm
<a href="#">34736</a> (Silver)			
<a href="#">34586</a>	Cavity Plug	---	

[www.molex.com/link/mx123.html](http://www.molex.com/link/mx123.html)