



Automotive Interconnects

And Systems – Version 2



GLOBAL AUTOMOTIVE CAPABILITIES



Lisle, IL, USA ★ ◆



Auburn Hills, MI, USA ◆



Lincoln, NE, USA □



Nogales, Mexico □



Guadalajara, Mexico ◆ □



Shannon, Ireland ◆ □



Villemur, France ◆ □



Ettlingen, Germany ◆ □



Kosice, Slovakia □



Zetronic, Italy ◆ □



Bièvres, France ◆



Moltech, Poland □





Yamato, Japan



Shizuoka, Japan



Ansan, Korea



Dalian 2, China



Jurong, Singapore



Bangkok, Thailand



Prai, Malaysia



Dalian 1, China



Bangalore Tool Room/India



Bangalore, India



Dongguan, China



Shanghai, China

Powertrain (Pages 6 – 10)

- Fuel Injection
- Valvetrain
- Emissions Control
- Engine Cooling
- Engine Control
- Ignition
- Transmission, Transaxles and 4-Wheel Drive
- Powertrain Harness Connectors
- Powertrain Control Modules

Infotainment/Networking/Communication (Pages 19 – 24)

- Instrumentation
- Driver Information Center
- Telematics
- Audio/Video
- Vehicle Communications
- Networking
- Antenna
- Navigation/Cruise Controls
- Intelligent Transport System
- Electronic Toll Collection



Your Technological and New Product Partner for Capabilities Throughout the Vehicle

Body Electronics (Pages 11 –18)

- Power Distribution/Fuse, Relay and Switching Boxes
- Power/Heated/Memory Seats
- Power Windows, Doors, Mirrors and Sunroofs
- Power Steering
- Interior Lighting
- HVAC – Heating Ventilation and Air Conditioning
- Security Systems/Car Access Systems
- Wipers, Washers and Defoggers
- Exterior Lighting
- Body Control Modules/Door Zone Modules



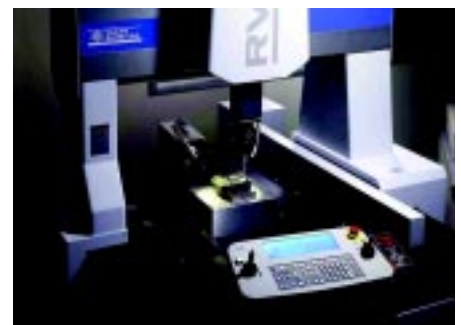
Safety/Chassis (Pages 25 – 28)

- Traction Control
- Brake Control (ABS)
- Stability Control
- Tire Safety
- Adaptive Cruise Control
- Forward Collision Warning
- Airbags/Safety Belts
- Impact Sensors
- Occupant Sensing
- Pedestrian Protection

As the second largest connector manufacturer in the world, Molex is fast becoming a technology and new product resource for vehicle manufacturers and Tier 1 suppliers. Molex automotive products meet the USCAR, European, Korean and Japanese Automotive Standards.

Molex is fully committed to meeting the stringent quality standards expected by automotive customers. Our automotive development teams can work with customers around the world, delivering every interconnect and interconnection system required in a vehicle.

Contact us today to view our full range of capabilities for the automotive industry.



Accredited Automotive Validation Testing Centers certified by major auto makers around the world



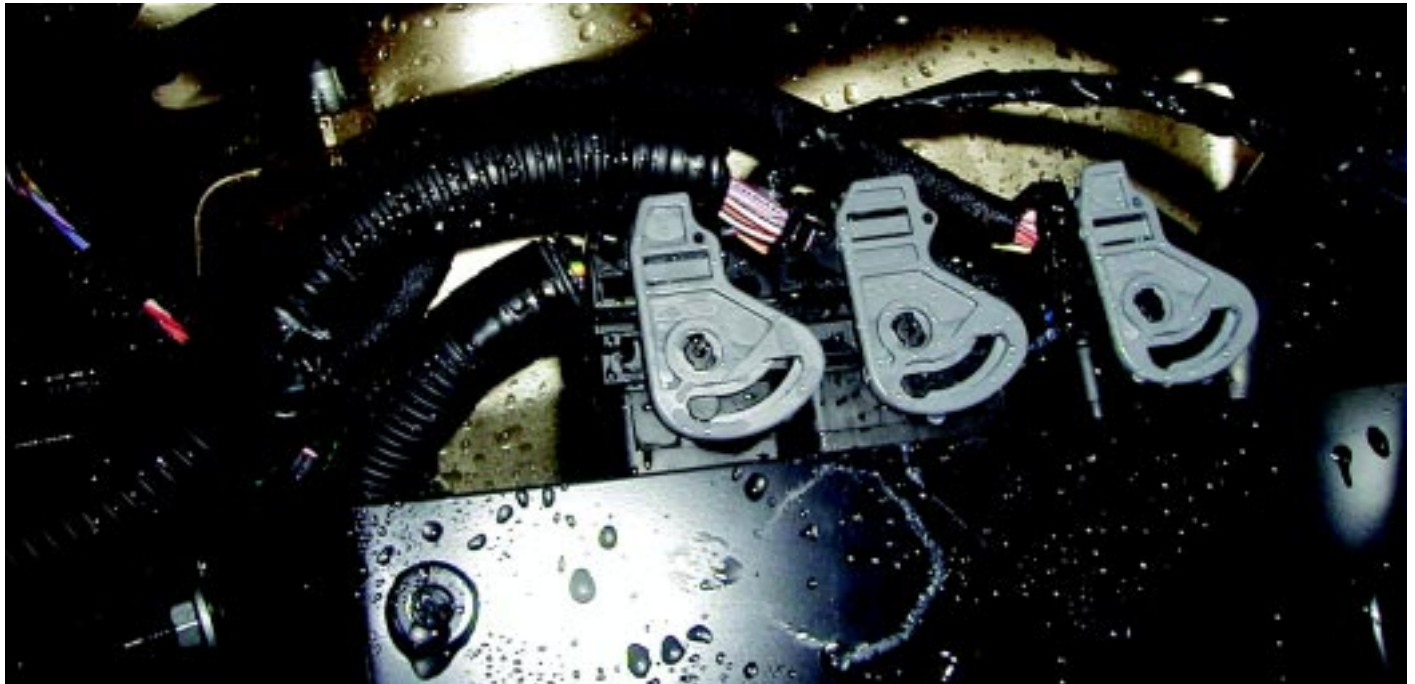
Interconnects for Maximum Power and Drive

Molex powertrain control modules and engine control units are designed to pack more capability into smaller packages. Our exclusive filtered connector technology offers filtering and shielding to reduce EMI and RFI, and to improve grounding and durability. Significant innovations include a sealed aluminium die cast, dual stack 160-way waterproof powertrain control module connector, capable of reducing noise by as much as 40 dB at 100 Mhz.

Molex automotive product applications classified in powertrain segment include: Fuel Injection; Valvetrain; Emissions Control; Engine Cooling; Engine Control; Ignition; Transmission, Transaxles and 4-Wheel Drive; Powertrain Harness Connectors and Powertrain Control Modules.



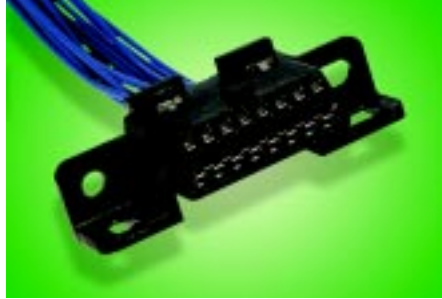
Integrated Header in Module Housing for ECU



CMC Connectors in Engine Application



OBD-II Connector, 1.50mm
Male Housing 68503
Terminal Female 50420, Male 57964



OBD-II Connector, 1.50mm
Flange Type 51116



OBD-II Connector, 1.50mm
Panel Mount Type 51115



OBD2 Female Housing with Flap Cover
98977



Stick Coil Connectors, 2-Way
49093



Fuel Injector Connector
34062



MX150™ 1.50mm Sealed Connectors, Single Row
Circuit Sizes: 2, 3, 4, 5, 6
Receptacle 33471, Blade 33481



MX150™ 1.50mm Sealed Connectors, Dual Row
Circuit Sizes: 2x2, 2x3, 2x4, 2x6, 2x8
Receptacle 33472, Blade 33482



MX150™ (USCAR Class II) Hybrid
Circuit Sizes: 2x8, 2x10
Receptacle 33476, Blade 33486



1.50mm SCC Sealed Connectors
Circuit Sizes: 1x1, 1x2, 1x3, 1x4, 1x5, 1x6
Female Housing/Pin Housing: 98969/98971



MX 64™ Sealed Connectors
Circuit Sizes: 1x2, 1x3, 1x4, 1x6, 1x8
31402, 31403, 31404



MX 120™ Sealed Connectors
Circuit Size: 1x4
34511



040 Wire-to-Wire Connector, 40-Way
Housing Female 35245, Male 35241
Terminal Female 35403, Male 35100



NSCC 30-Way Hybrid Connectors
Housing Female 98122, Male 98761



Gearbox Mont Pin Connector, 33-Way
98991
Receptacle Modules 98990



Blade Connector, 6-Way
91203



High-Pressure Fuel Filter
49090



Fuel Pump Flange Connector
Female Housing 35515, Header 35365

CMC CONNECTORS



CMC Connectors for ECU and Transmission
Circuit Sizes: 32, 48, 80
98944, 98950, 98547
Terminals: MOX 0.64mm and CP 1.50mm
Gel Sealing



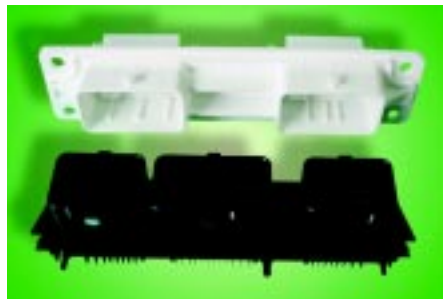
CMC Connectors for ECU and Transmission
Circuit Sizes: 24, 28, 32, 36, 38, 48
98992, 98993
Terminals: CP 0.60mm and 1.50mm
Grommet Sealing



CMC Connectors for ECU and Transmission
53-Way Hybrid
98995
Terminals: CP 0.64mm, 1.50mm and 2.80mm
Grommet Sealing



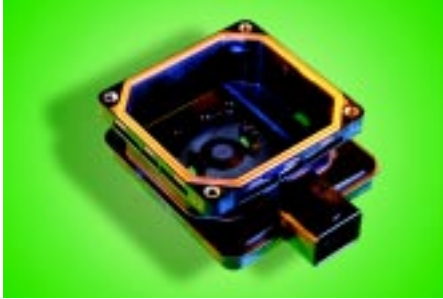
CMC Headers for ECU and Transmission
Circuit Sizes: 84, 112
Insert Mold 98747, 98998



CMC Headers for ECU and Transmission
Circuit Sizes: 80, 96, 112
98467, 36638, 98228



CMC Header for ECU and Transmission
Circuit Size: 48



CMC BMS Hybrid Header, 32-Way
98748

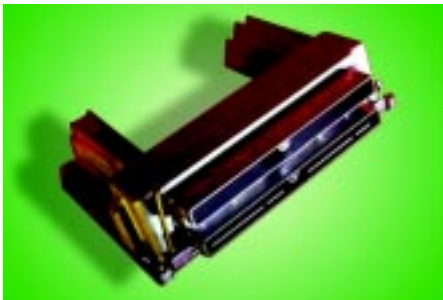


CMC Header for ECU and Transmission
Circuit Sizes: 112, 128, 144



CMC Inline Connector
Circuit Size: 32

CUSTOM CAPABILITIES



Filtered/Shielded Header for PCM
I/O Connection



Header - I/O for ECU



Header - I/O for ECU



Header for Engine Management



Integrated Header in Module Housing for ECU



Headers/Harness Connector for PCM



Compliant Pin Header - I/O for TCU



2.80mm Wire-to-Wire
Circuit Sizes: 1, 2, 6



6.30mm Wire-to-Wire
98360, 98363



Vehicle Speed Sensor Header

INTEGRATED INTERCONNECTS



Sub-Harness for Engine Cooling Fan



Sub-Harness for Fuel Pump



Knock Sensor Harness



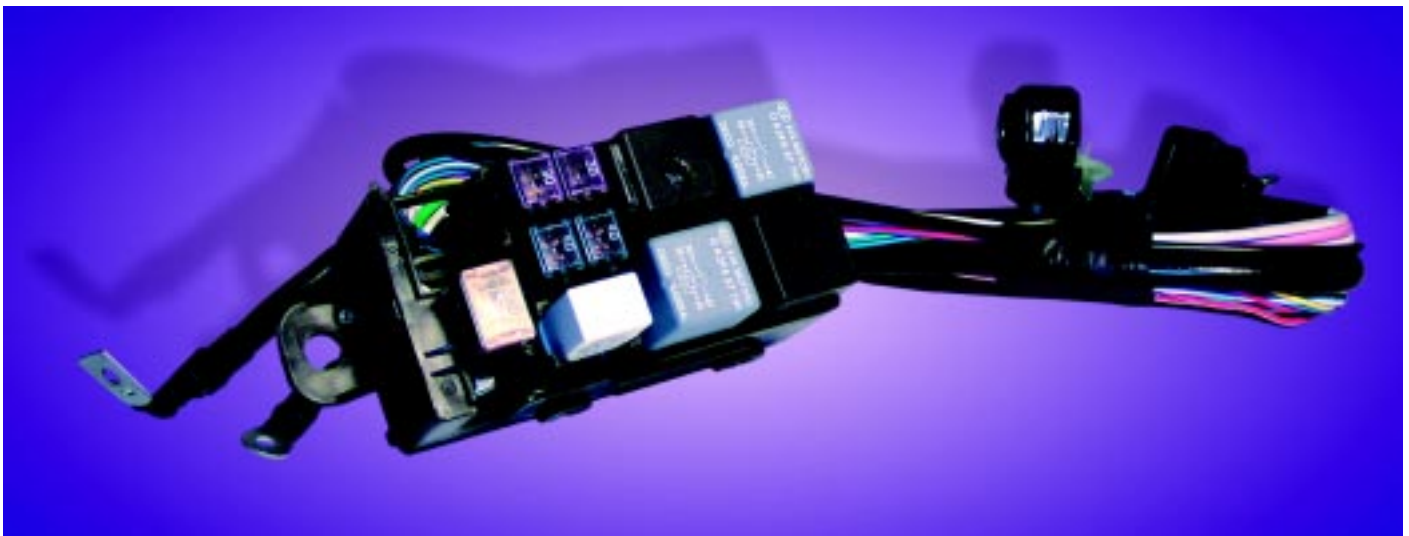
Oxygen Sensor Harness



Viscous Clutch Adaptor Sensor

Molex's rugged connectors for body applications are designed to perform under the harshest conditions. They incorporate innovations that facilitate modular design and easy assembly for customers.

Molex automotive product applications classified in body electronics include: Power Distribution/Fuse, Relay and Switching Boxes; Power/Heated/Memory Seats; Power Windows, Doors, Mirrors and Sunroofs; Power Steering; Interior Lighting; HVAC – Heating Ventilation and Air Conditioning; Security Systems/Car Access Systems; Wipers, Washers and Defoggers; Exterior Lighting and Body Control Modules/Door Zone Modules.

**Flat Wire System for Power Mirror and Window****ECU and PDU Housing with Leadframe****Fuse and Relay Box in Electrical Distribution**



NSCC 1.50mm Unsealed Connectors

Circuit Sizes: 1x2, 1x3, 1x4, 2x5
Pin Housing 98822, 98823, 98967



NSCC 1.50mm Unsealed Connectors

Circuit Sizes: 1x2, 1x3, 1x4, 2x5
Receptacle Housing 98815, 98816, 98817

UCC 2.80mm Unsealed Connectors

Circuit Sizes: 1x2, 1x3, 1x6
Pin Housing 98824, 98960

UCC 2.80mm Unsealed Connectors

Circuit Sizes: 1x2, 1x3, 1x6
Receptacle Housing 98824, 98960



250 Wire-to-Wire Connectors

Circuit Sizes: 1, 2, 3, 4, 6
Housing Female 35270, Male 35272



090+250 Hybrid Wire-to-Wire

Housing Female 35382, Male 35385



6.30mm Wire-to-Wire

Switch I/O
35819, 35274, 35278, 35821, 35883



040 III Wire-to-Board

Circuit Sizes: 8 – 36
35563, 35564, 68145, 68151



040 III Wire-to-Board Right Angle

Circuit Sizes: 8 – 36
68151



040 Joint Connectors, 20-Way

49057, 49058



030+090 Hybrid Wire-to-Wire

Receptacle/Plug: 35378/35380, 35374/35376



040+090 Hybrid Wire-to-Wire

Circuit Sizes: 8 – 48
35896/35897, 35382/35385



090+250 Hybrid Wire-to-Wire

Housing Female 35382, Male 35385



Connector for Temperature Sensor



HDX Wire-to-Wire
Mirror Connectors
98284



H3 Connectors
Circuit Sizes: 10, 14, 23, 36

MOX CONNECTORS



MOX 0.64mm Flex Connectors, Receptacle
Circuit Sizes: 1x3, 1x6
98197, 98199



MOX 0.64mm Flex Connectors, Receptacle
Circuit Size: 2x3
98198



MOX 0.64mm Connectors, Receptacle
Circuit Sizes: 1x2, 1x6, 1x8
98696, 98193, 98545



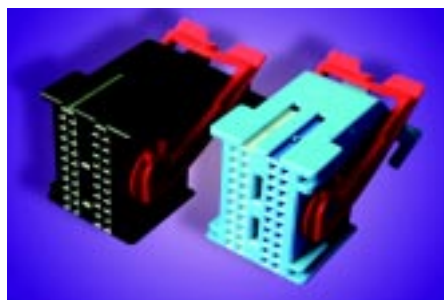
MOX 0.64mm Connectors, Receptacle
Circuit Size: 2x3
98192



MOX 0.64mm Connectors, Receptacle
One Piece Housing, 2x3 Way
98298



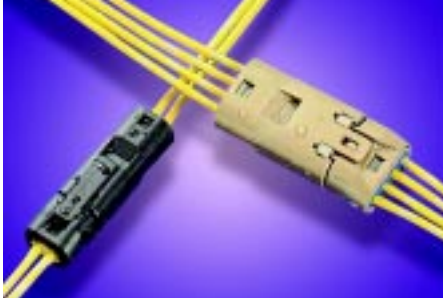
MOX 0.64mm Connector, Receptacle
18-Way
98695



MOX 0.64mm Connectors, Receptacle
40-Way
98982



MOX 0.64mm Connector, Receptacle
64-Way
98615



Miniature Splash-Proof Connectors
52213, 52266



Splash-Proof Connectors
52116, 52117



1.50mm SCC Sealed Connectors
Circuit Sizes: 1x1, 1x2, 1x3, 1x4, 1x5, 1x6
Female Housing/Pin Housing: 98969/98971



MX150™ (USCAR Class II) Hybrid
Circuit Sizes: 2x8, 2x10
Receptacle 33476, Blade 33486



MX150™ 1.50mm Sealed Connector
Circuit Size: 2
34062

2.80mm UCC Sealed Connectors
Circuit Sizes: 1x1, 1x2, 1x3
Female Housing/Pin Housing: 98967/98970

HEADLAMP SOCKET AND CONNECTORS



HID Lamp Socket



MX150™ 3-Way Sealed Connectors
Receptacle/Male Housing: 34250/34091



PT Bulb Sockets, Sealed
Double 35842, Single 35843



Bulb Sockets, Non-Sealed
Double 35532, Single 35533



Lamp Sockets, Non-Sealed



Bulb Sockets for License Plate



Wedge Bulb Sockets
49505



Wedge Bulb Sockets
FSM 35340, HMS 35343, STS 35341

HORN, WIPER AND IMMOBILIZER CONNECTORS



Filter Horn Connectors
Female Housing 35825, Terminal 35407



Sealed Horn Connector
Female Housing/Header: 35215/35216, 35338



Wiper Motor Connectors



Header for Immobilizer
87800



Customized Body Harness



Customized Body Harness



Header for Siren System



ECU and PDU Housing with Leadframe



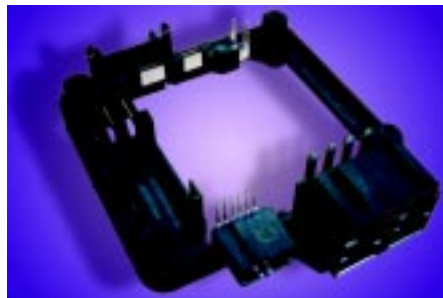
Door Zone Modules



Door ECU Housing



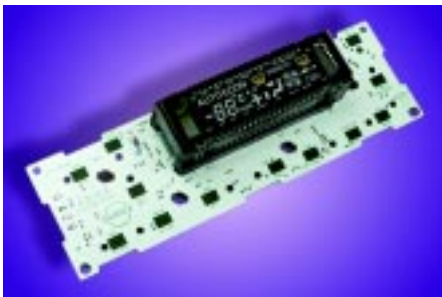
Body Computer



Insert Molded Assembly – EPS



EHPS ECU Connector Built-In Case
Electric Hydraulic Power Steering



HVAC Display Assembly



HVAC Control Assembly



Wiper Motor Seat



Sub-Harness for Steering Wheel
Using C-Grid Connectors



Sub-Harness
For External Mirror



Sub-Harness for Seating Position Motor



IDT Harness for Air Conditioner



Sub-Harness for Wiper Motor



High Mount Stop Lighting Harness Assembly



Lighting Harness



Lighting Harness



Xenon Lighting, Fully Shielded



Window Technology by Laser Skinning
Terminal Connection through Laser Welding
Interconnection through Ultra-Sonic Welding



Flat Wiring System



FFC for Tailgate Application



Fuse and Relay Box – CT/TU Engine Harness



Fuse and Relay Box – RS Engine Harness



Fuse and Relay Box – M100 Engine Harness
35827



Fuse and Relay Box – FC IP Harness



Relay Box – RS IP Harness



Fuse and Relay Box – M100 IP Harness
35505



Junction Box (Fuse)



Pin Fret Electrical Distribution Centers
Central Electrical Fusing



Fuse Box



Central Electrical Box with EON and Fuse Clips



Maxi-Fuse Box Bracket



Maxi-Fuse Box Bracket

Molex's success in connector miniaturization is allowing automotive designers to reduce space required by connectors for on-board navigation, information and entertainment systems. Molex's self-aligning connector (SAC) allows automakers to blind-mate the instrument panel to the car body in one step, improving line speed and production quality.

Molex Automotive product applications classified in the infotainment/communication/networking segment include: Instrumentation; Driver Information Center; Telematics; Audio/Video; Vehicle Communications; Networking; Antenna; Navigation/Cruise Controls; Intelligent Transport System and Electronic Toll Collection.

**MOST Junction Boxes****SAC Connectors in Cluster Application****Telematics Application**



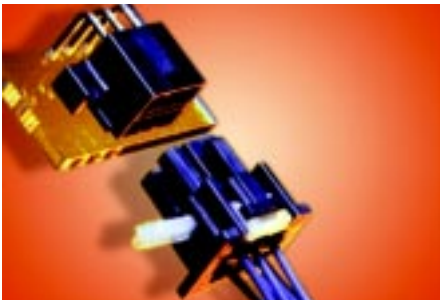
090 (2.30mm) Connectors
Circuit Sizes: 6, 8, 10, 12, 16, 20
Receptacle 35284, 35286, Plug 35282, Header 68139



Blade Header 2.80mm
Circuit Sizes: Single Row 2 – 5, Double Row 4, 6, 8, 10
Header 31339



VDL (5.00mm) Connectors
Circuit Sizes: 1 – 9
Female/Male Housing: 98935/98895



Mini-Fit TPA™ Connectors
30068, 30069, 30070
Standard/HCS Terminal up to 9A/12A



Mini-Fit Jr.™ Wire-to-Wire Connectors
Receptacle/Plug: 5557/5559



Micro-Fit™ 3.00mm Wire-to-Wire, Blind Mate
Receptacle/Plug: 43025/43020
Terminal Female 43030, Male 43031

I/O HEADERS



Audio I/O Hybrid Connectors, 20-Way
Plug 35316, Receptacle 35159
Terminal Female 50350, Male 35028



Audio I/O Hybrid Connector, HDAC 24-Way
Right Angle Header 30700



0.64mm Hybrid Multipocket USCAR Header
Right Angle 3134X
Vertical 3135X



ISO Junction Box 1.00mm
35867



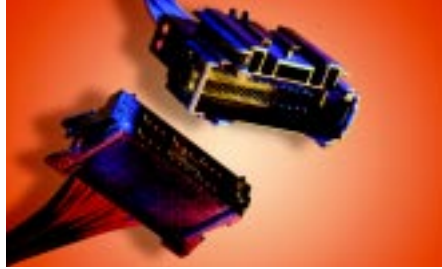
Radio I/O Connectors with Fuse
Right Angle Header 53526, Female 51128



Press-Fit Multi-Pocket Headers



H-DAC 64™ (0.64mm) In-Line
Circuit Sizes: Dual Row 6 – 20, Single Row 3 – 6
Dual Row Female/Male: 30700-1/30968-1
Single Row Female/Male: 31067/31073



NSCC Adapter Wire-to-Wire for both for 1.50mm/2.80mm Terminals
Circuit Sizes: 12, 15, 18
98464, 98315

MEMORY CARD AND SMART CARD CONNECTORS



Miniature Memory Card
SD, miniSD, MMC and CompactFlash



Smart Card for Electronic Toll



Memory Card Interconnectors
MS/XD 2 in 1 Combo: 87859
MS/MS Duo/XD 3 in 1 Combo: 87853

PCB CONNECTORS



HDX Wire-to-Board, Single Row
Circuit Sizes: 1x12, 1x15
98591, 98592, 98624, 98623, 96461, 98625, 98627



HDX Wire-to-Board, Dual Row
Circuit Sizes: 2x12, 2x15
98627, 98629, 98462, 98630, 98631



NSCC Wire-to-Board 1.50mm/2.80mm
Circuit Sizes: 12, 15, 18
98463, 98478



USCAR Multibay Header Assembly 2 and 3 Pockets
Circuit Sizes: 8 – 20
3134X, 3135X



H-DAC 64™ (0.64mm) Wire-to-Board Vertical
Circuit Sizes: Dual Row 6 – 20, Single Row 3 – 6
Dual Row Female/Headers: 30700-1/30700-4
Single Row Female/Headers: 31100 – 31103



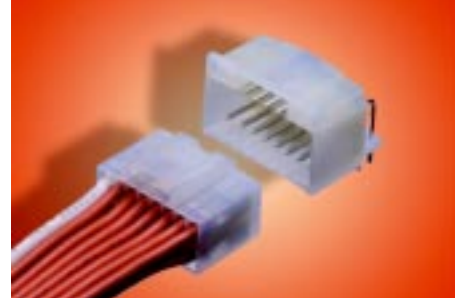
H-DAC 64™ (0.64mm) Wire-to-Board Right Angle
Circuit Sizes: Dual Row 6 – 20, Single Row 3 – 6
Dual Row Female/Headers: 30700-1/30700-5
Single Row Female/Headers: 31100 – 31103



040 III Wire-to-Board Right Angle
Circuit Sizes: 8 – 36
68151



040 Round Pin WTB
Circuit Sizes: 7, 8, 10
35009, 35200



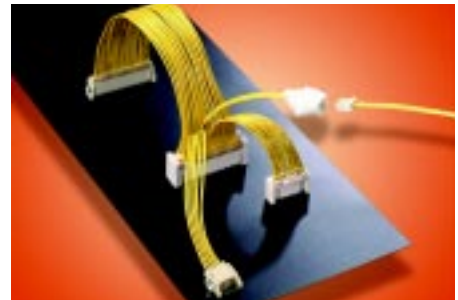
2.50mm – 3.00mm Wire-to-Board



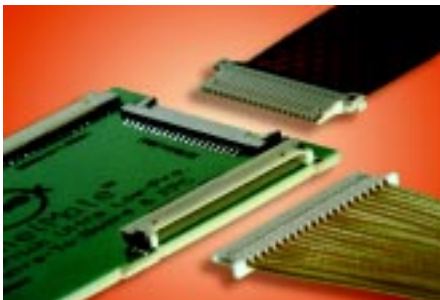
Micro-Fit™ 3.00mm Wire-to-Board
SMT/SMC Compatible Headers



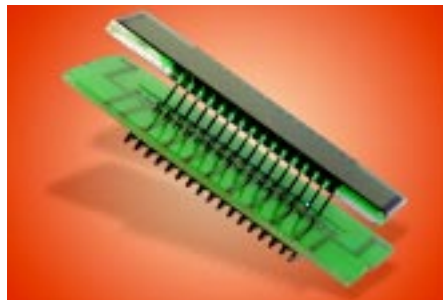
Mi II™ System 2.00mm Wire-to-Board



Mini Mi II™ System 1.25mm Wire-to-Board



PanelMate™ 1.25mm Wire-to-Board



LCD Bottom Entry Socket
Circuit Sizes: 10 – 20
54980



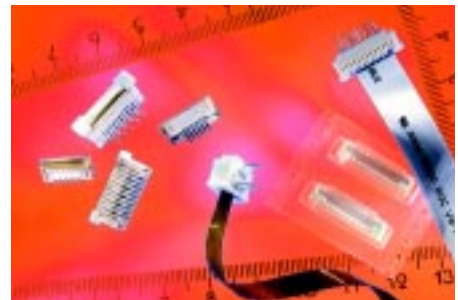
Detachable Board-to-Board



Milli-Grid™ 2.00mm System
Circuit Sizes: 4 – 50



KK® 2.54mm and 3.96mm Wire-to-Board System



FFC/FPC Connectors



Picoflex™ Connectors
Circuit Sizes: 4 – 20

FIBER OPTIC, MOST, IEEE 1394/1394B AND USB CONNECTORS



MOST Receptacle Housing
With Connectors and Cable Cover



MOST Products – 42-Pin Custom Connectors



IEEE 1394 Latching Style Connectors



IEEE 1394b Connectors

CUSTOM CAPABILITIES



SAC Self-Aligning Connectors
Circuit Sizes: 10 – 75
Cluster, Power Steering, Mirror and Window



Filtered/Shielded Headers
Circuit Sizes: 5 – 195
Radio, Navigation and Glove Compartment



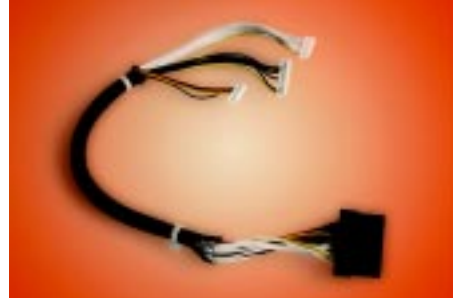
Meter Movement Socket 4P
Instrument Meter



PicoFlex™ Jumper
For Cluster and HVAC



Sub-Harness for DVD Entertainment
Using 1.25mm Series Connectors



Sub-Harness for Rear Entertainment System



FAKRA RF Connectors and Antenna
For Radio and GPS



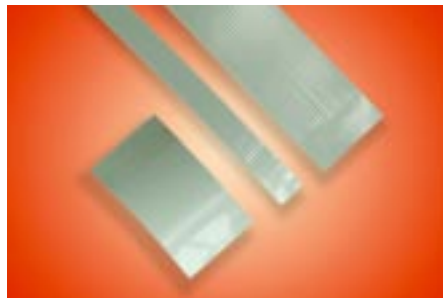
Dome Foil for Car Audio Switch



Sub-Harness for Fire Suppression Systems



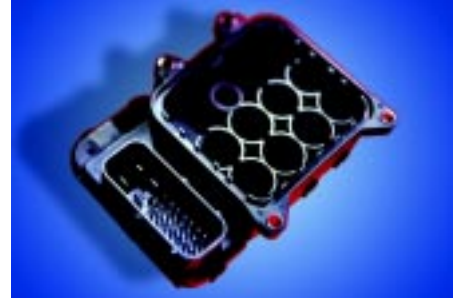
Flex Assembly



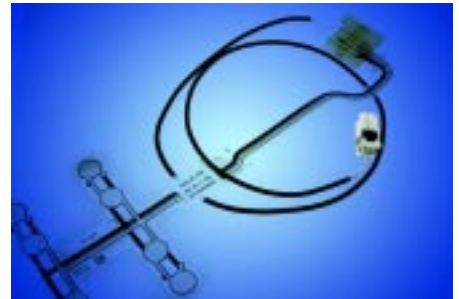
Premo-Flex™ – FFC Jumper
0.50mm, 1.00mm, 1.25mm
98266, 98267, 98268

Airbags, ABS brakes, vehicle stability systems and other passenger safety equipment have become essential to the function and appeal of today's vehicles. Molex continually invests in the development of these connectors so that you can always count on the reliability and performance of these often life-saving devices. Example includes pioneering development of collision avoidance devices such as distance control sensors that are built into bumpers to alert drivers to nearby objects.

Molex Automotive product applications classified in safety/chassis segment include: Traction Control; Brake Control (ABS); Stability Control; Tire Safety; Adaptive Cruise Control; Forward Collision Warning; Airbags/Safety Belts; Impact Sensors; Occupant Sensing and Pedestrian Protection.



ABS Connector and ECU Case



Seat Belt Reminder Sensor Assembly



Interconnects for Airbag Application



ABS Connector and ECU Case



ABS Connector and ECU Case



**ABS Connector and ECU Case
Connector on Brake Cylinder**



**ABS Module Connectors
37-Way Sealed**



Insert Molded Assembly – ABS

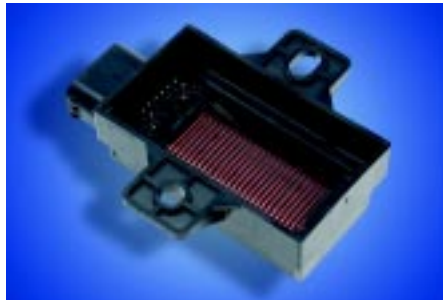


Insert Molded Assembly – ABS

INTERCONNECTS FOR TIRE SAFETY



**Tire Safety Sensor Header, 12-Way
87789**



Tire Pressure Monitor Sensor



Airbag Connectors



MOX 64-Way Connector for Airbag



64-Way Airbag Header Press-Fit



Squib Connectors with Wires



Squib Connectors with Flex



**Switch Connectors for Inflator
49024**



Side Crash Sensor Housing



Side Satellite Impact Sensor Housing



Crash Sensor Connector



MX150™ Sealed Connectors with Shortening Bar
Circuit Size: 1x4
Receptacle/Blade: 33471/31280



Splash-Proof 1x4
Receptacle/Blade: 52116, 52117/50038, 50039



NSCC 1.50mm
Circuit Sizes: 1x2 – 1x5
Receptacle/Blade: 98815/98822



MX150™ Sealed Connectors with Shortening Bar
Circuit Size: 2x8
Receptacle/Blade: 33476/33486



MX64™ Sealed Connectors
Circuit Sizes: 1x2
31402, 31403, 31304



MX150™ Sealed Connectors, 3-Way
Pretensioner and Occupant Sensor Harness
Receptacle/Male Housing: 34250/34091

INTEGRATED INTERCONNECTS



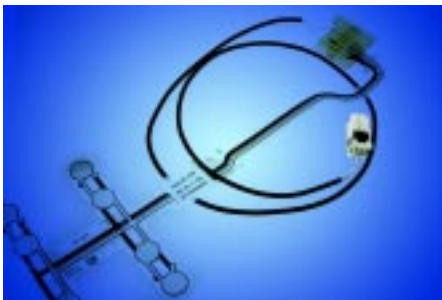
Sub-Harness for Bumper Sensors



Cable with Squib Connectors



Mirror Indicator Assembly



Seat Belt Reminder Sensor Assembly



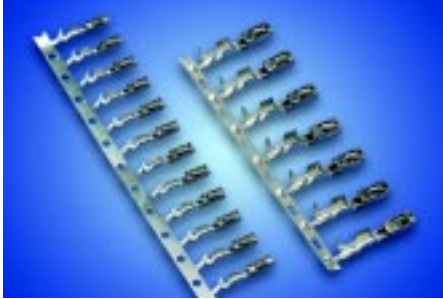
Ignition Key Assembly (Metal Dome)



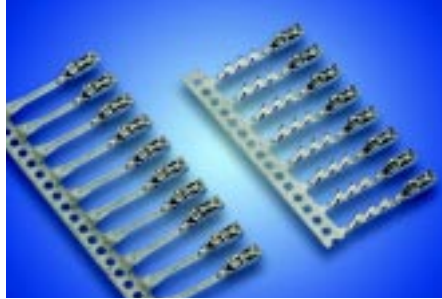
Harness Assembly for Mirror Indicator



Wheel Speed Sensor Harness



MOX Wire Crimp Terminals, 0.64mm, 1.50mm
98195, 98658



MOX FFC Terminals
0.64mm, both Crimp and Solder Versions
98194



HDX Terminals, 0.64mm
Female 98587, Male 98588



MX150™ Terminals 14,16,18, 20 AWG
Tin Plated Female 33012, Male 33000
Gold Plated Female 33001, Male 33011



NSCC Terminals
1.50mm, 2.80mm Tin Plated Receptacle
98897, 98898



SLX (Fork) Terminals
98389



030, 040, 090 Tab Terminals
Male/Female: 35800/35298, 50660/50654,
35420/35421



Slip-In Blade Terminals
110: Contact 35711-02, Receptacle 35711-06
250: Contact 35725, Receptacle 35427
320: Contact 35030, Receptacle 35032



CP150
Wire Gauge: 10.0mm² – 25.0mm²



Micro-Pin 1.50mm Round



Power Pin 2.80mm Round



040 Round Pins
35403, 35100



Ring Terminals 2.50mm – 6.40mm
35750

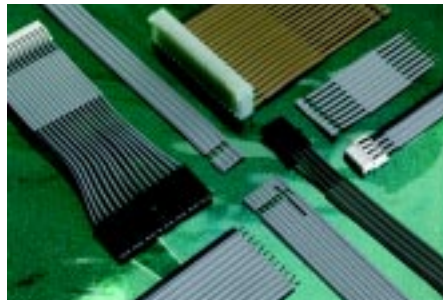


Ring Terminals 2.70mm² – 10.0mm²
98860 – 98863

INTEGRATED INTERCONNECT TECHNOLOGIES



Micro-Fit Overmold



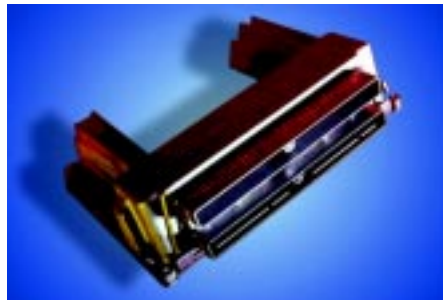
Ribbon Cable Assembly



HVAC Control Assembly



Integrated Header in Module Housing for ECU



**Filtered/Shielded Header for PCM
I/O Connection**



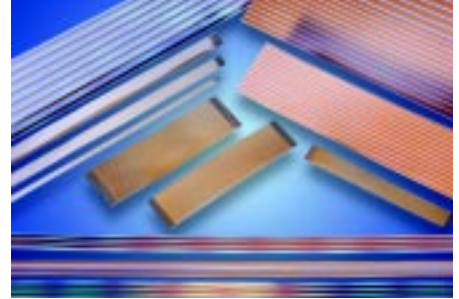
FPC Jumper

Fine Pitch: 0.30mm, 0.50mm, 0.625mm, 1.00mm, 1.25mm, 2.54mm



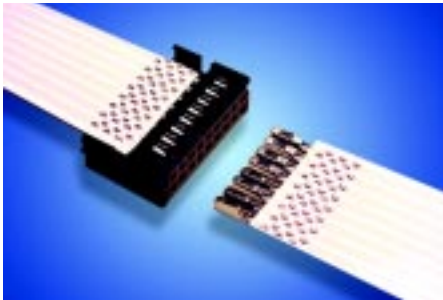
FFC Pigtails

Pitch: Customized
Laser Soldering – Window Technology

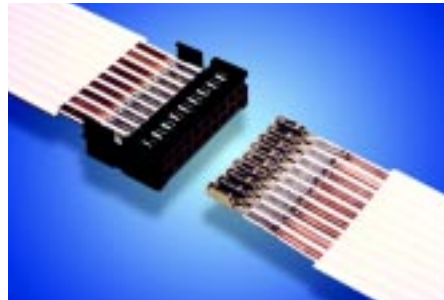


Premo-Flex™

Pitch: 0.50mm, 1.00mm, 1.25mm
98266, 98267, 98268



MOX Crimped Terminals



MOX Soldered Terminals



Flex Assembly



Bringing People & Technology Together, WorldwideSM

Americas Headquarters

2222, Wellington Court
Lisle, Illinois 60532 U.S.A.
Tel: 1-800-78MOLEX
amerinfo@molex.com

Far East North Headquarters

Yamato, Kanagawa, Japan
Tel: 81-462-65-2324
feninfo@molex.com

Far East South Headquarters

Jurong, Singapore
Tel: 65-6-268-6868
fesinfo@molex.com

European Headquarters

Munich, Germany
Tel: 49-89-413092-0
eurinfo@molex.com

Corporate Headquarters

2222 Wellington Court
Lisle, Illinois 60532 U.S.A.
Tel: 630-969-4550

Visit our Website at www.molex.com