



Sealed MX120G™ connectors offer greater cost and space savings while providing superior design and mating features to meet the needs of harsh environment, non-automotive transportation applications

Molex's MX120G™ connector system is a highly compact, sealed 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 rugged, harsh-environment non-automotive applications that range from tractors and combines to snow mobiles and jet skis; the MX120G interconnect system can be extended to exterior lighting applications that include traffic and overhead street lights; and is a more reliable and less expensive solution to pre-crimped wire-seal alternatives.

The MX120G™ wire-to-wire and wire-to-board receptacles feature a single-piece pre-assembly comprising a high-temperature connector housing, male silicone seal and a seal cap for strain relief – all pre-assembled and ready for easy crimp insertion. Standard through-hole male headers have a 3.20mm pitch footprint that makes ample room 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 ensures robust terminal retention while preventing any accidental terminal backout. Its unique twist-lock design ensures proper terminal alignment of the header contacts with those of the female receptacle thus eliminating the need for any fasteners. Female cavity plugs are available to allow selective sealing of circuit voids in female receptacles for both wire-to-wire and wire-to-board applications.

The terminals of the MX120G receptacle accept FLRY-B* wire sizes of 0.35 to 1 sq. mm conductor diameter allowing the receptacle to take multiple cable configurations for added flexibility.

Color codes on each component of the Wire-to-Board assembly make identification very easy.

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

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 of -40 to +105°Celsius; provides complete protection of connector against dust and water (up to 1 m depth) and other defined conditions of pressure and time

High-vibration resistance up to 10G acceleration secures mating in high-vibration environment and applications

Independent terminal lock on 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; eliminating 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 with self-guiding slot for easy assembly into the ECU (Engine Control Unit) box facilitates easy assembly and subsequent potting (a process of filling a complete electronic assembly with thermosetting plastics for protection against shock and vibration as well as for exclusion of moisture and corrosive agents)

*FL – Automotive Wire; R – Reduced Thickness of Insulation; Y – PVC Insulation

MX120G™ Sealed Wire-to-Wire and Wire-to-Board Connectors, IP67-rated

36783 Male Header, Through Hole, Right Angle

36799 Wire-to-Wire Female Crimped Terminal

36792 Wire-to-Wire Female Receptacle with Matte Seal, Seal Cap and Interface Seal

36804 Cavity Plug for Female Receptacle



MX120G™ Sealed Wire-to-Wire and Wire-to-Board Connectors

Specifications

CONNECTORS

Reference Information

Packaging:

Carton (all); Bag (Series 36804)

UL File No.: Pending approval

CSA File No.: Pending approval

Mates With: Refer to table

Use With: Refer to table

Designed In: mm

RoHS Compliant: Yes

Halogen Free: Yes

Glow Wire Compliant: No

Electrical

Voltage (max.): 28 V DC

Current (max.): 10.5A (per contact)

Contact Resistance (max.):

20 milliohms

Dielectric Withstanding Voltage:

1000 VAC

Insulation Resistance (min.):

20 megaohms

Mechanical

Contact Insertion Force (max.): 30N

Contact Retention to Housing (min.):

50N

Mating/Unmating Force:

75N (max.); 90N min. (lock engaged)

Durability (max.): 10 cycles

Physical

Housing:

HB-rated, glass-filled Nylon, black

(Series 36783)

Nylon (Series 36792), black

Contact:

C42500 Brass / Copper alloy

Plating: Pre-plated Tin (Sn)

Contact Area — Tin (Sn)

Solder Tail Area — Tin (Sn)

Underplating — Nickel (Ni)

PCB Thickness (recommended):

1.60mm

Operating Temperature:

-40 to +105 °C

CRIMP TERMINALS

Reference Information

Packaging: Reel

Use With: Refer table below

Designed In: mm

RoHS Compliant: Yes

Halogen Free: Yes

Glow Wire Compliant: No

Electrical

Voltage (max.): 28V DC

Current (max.): 10.5A (per contact)

Contact Resistance (max.):

20 milliohms

Dielectric Withstanding Voltage:

1000 VAC

Insulation Resistance (min.):

20 megaohms

Mechanical

Contact Insertion Force:

Contact Retention to Housing:

Durability (min.):

Crimped Wire Pullout Force:

0.35 mm² wire – 35N (min.)

0.50 mm² wire – 55N (min.)

0.75 mm² wire – 75N (min.)

1.00 mm² wire – 88N (min.)

Physical

Contact: Copper Alloy

Plating: 1.00µm (39µ") Tin (Sn)

Contact Area —

1.00µm (39µ") Tin (Sn)

Solder Tail Area —

1.00µm (39µ") Tin (Sn)

Underplating —

Nickel (Ni)

Operating Temperature:

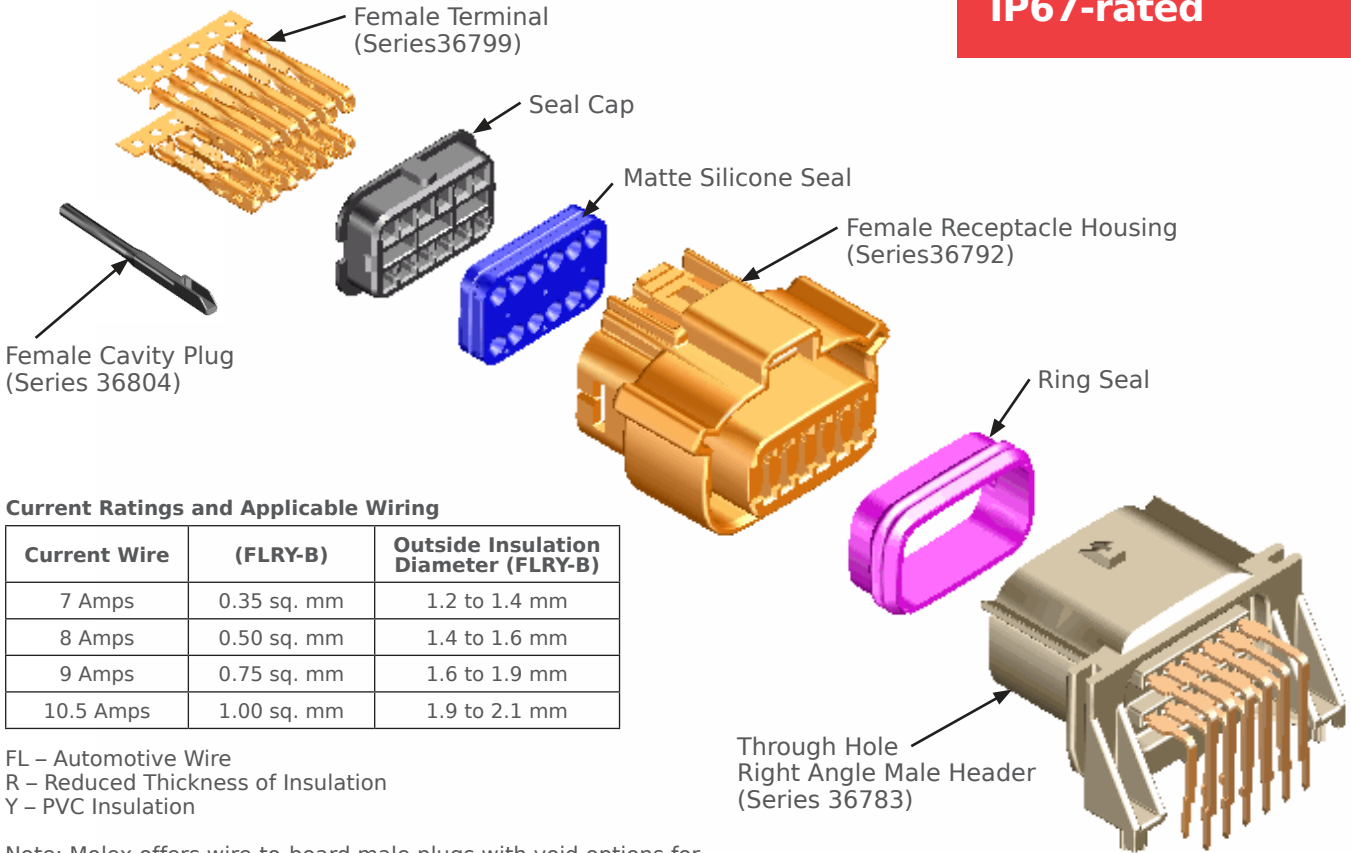
-40 to +105 °C

**MX120G™ Sealed
Wire-to-Wire and
Wire-to-Board
Connectors,
IP67-rated**



MX120G™ Sealed Wire-to-Board Connector Configuration

MX120G™ Sealed Wire-to-Wire and Wire-to-Board Connectors, IP67-rated



Current Ratings and Applicable Wiring

Current Wire	(FLRY-B)	Outside Insulation Diameter (FLRY-B)
7 Amps	0.35 sq. mm	1.2 to 1.4 mm
8 Amps	0.50 sq. mm	1.4 to 1.6 mm
9 Amps	0.75 sq. mm	1.6 to 1.9 mm
10.5 Amps	1.00 sq. mm	1.9 to 2.1 mm

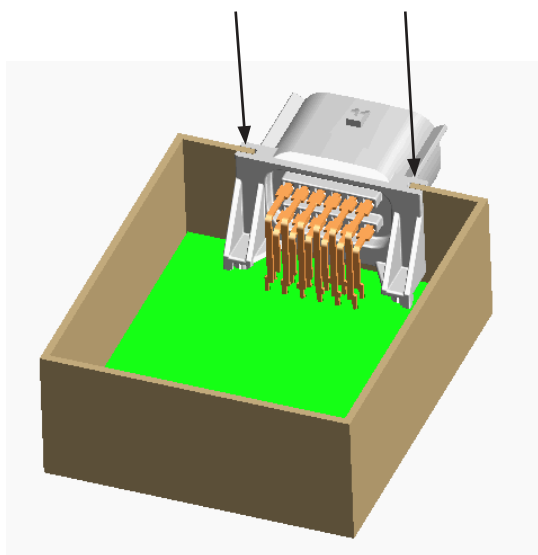
FL – Automotive Wire
 R – Reduced Thickness of Insulation
 Y – PVC Insulation

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

Mating configuration of a typical 2-by-6 circuit, sealed MX120G™ wire-to-board assembly (exploded view)

Additional Product Features

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

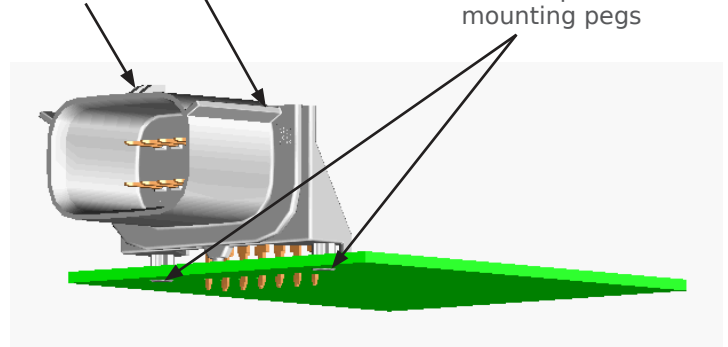


Rear view of a sealed MX120G™ male header mounted on an ECU box

Polarization features for mating to receptacle

Locking ramp

Cross-shaped PCB mounting pegs



Mating interface of a PCB-mounted MX120G™ male header

Applications

Transportation

- Buses
- Motorcycles and scooters

Agriculture and worksite vehicles

- Utility vehicles
- Tractors and combines
- Riding lawnmowers

Recreational Vehicles

- Snowmobiles
- Golf carts
- Jet skis

Industrial

- Construction equipment
- Marine equipment
- Oil and gas installations

Exterior LED Lighting

- Traffic lights
- Overhead street lights

Medical

- Splash-proof medical equipment



LED street lights



Golf cart

MX120G™ Sealed Wire-to-Wire and Wire-to-Board Connectors, IP67-rated



Agriculture vehicles



Motorcycles and scooters

Ordering Information

Connectors

Order No.	Circuits	Description	Mates with	Use with
36792-1201	12	Female Receptacle	36783-120X (X = 1 to 8; refer SD for color mark identification options)	36799-0001 and 36799-0002 Crimp Terminals
36783-1201		Right Angle Shrouded Male Header	36792-1201	-
36804-0001	1	Cavity Plug for Female Receptacle	-	36792-1201 Female Receptacle

Crimp Terminals

Order No.	Description/ (Grip Code)	Wire Gauge (AWG)	Wire Size (mm ²)	Wire Insulation Diameter (mm)	Use with
36799-0001	Female Crimp Terminal (M)	17 - 20	0.50 - 0.75	1.4 - 1.9	36792-0401 and 36792-1201
36799-0002	Female Crimp Terminal (S)	20 - 22	0.35 - 0.50	1.2 - 1.6	

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