



PRODUCT SPECIFICATION

MX150L 12-10-8 AWG WIRE-TO-WIRE, PANEL MOUNT & PCB HEADER CONNECTOR SYSTEM

1.0 SCOPE

This Product specification covers the 7.62 mm (.300 inch) centerline (pitch) Connector Series terminated with 12 to 8 AWG wire using Crimp Technology with Tin plated Terminals

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBERS

- a. 19431 Male Terminals
- b. 19431 Circuit Plugs, Standard & W-T-B
- c. 19432 Wire to Wire Receptacle Assemblies
- d. 19433 Wire to Wire Plug Assemblies
- e. 19434 Female Terminals
- f. 19436 Panel Mount Plug Assemblies
- g. 19437 Right Angle PCB Header Assemblies

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

- a. All dimensions can be found on the sales drawings
- b. Plastic Materials are glass-filled PBT
- c. Terminal materials (Male/Female) are high strength Copper Alloy
- d. Terminal Platings are Tin over Nickel
- e. Grommets are lubricated Silicone rubber
- f. Panel gaskets are EPDM rubber

2.3 SAFETY AGENCY APPROVALS

- a. UL file #E152602
- b. CSA file #018689, class 6233-01
- c. All molded components are flammability rated UL94 V-0

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 Receptacle assemblies 2, 4 position

Sales Drawing SD-19432-***

Packaging Drawing PK-19432-***

3.2 Plug Assemblies 2, 4 position

Sales Drawing SD-19433-***

Packaging Drawing PK-19433-***

3.3 Panel Mount Plug Assemblies 2, 4 position

Sales Drawing SD-19436-***

Packaging Drawing PK-19436-***

3.4 Right Angle PCB Header Assemblies 4 position

Sales Drawing SD-19437-***

Packaging Drawing PK-19437-***

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3.5 Male Terminals 12, 10, 8 AWG

Sales Drawing SD-19431-***
Packaging Drawing PK-19431-*** (Loose Piece)

3.6 Female Terminals 12, 10, 8 AWG

Sales Drawing SD-19434-***
Packaging Drawing PK-19434-*** (Loose Piece)

3.7 Circuit Plugs for Receptacle, Plug & Panel Mount Assemblies

Sales Drawing SD-19431-***
Packaged in Strips only

4.0 RATINGS

4.1 VOLTAGE

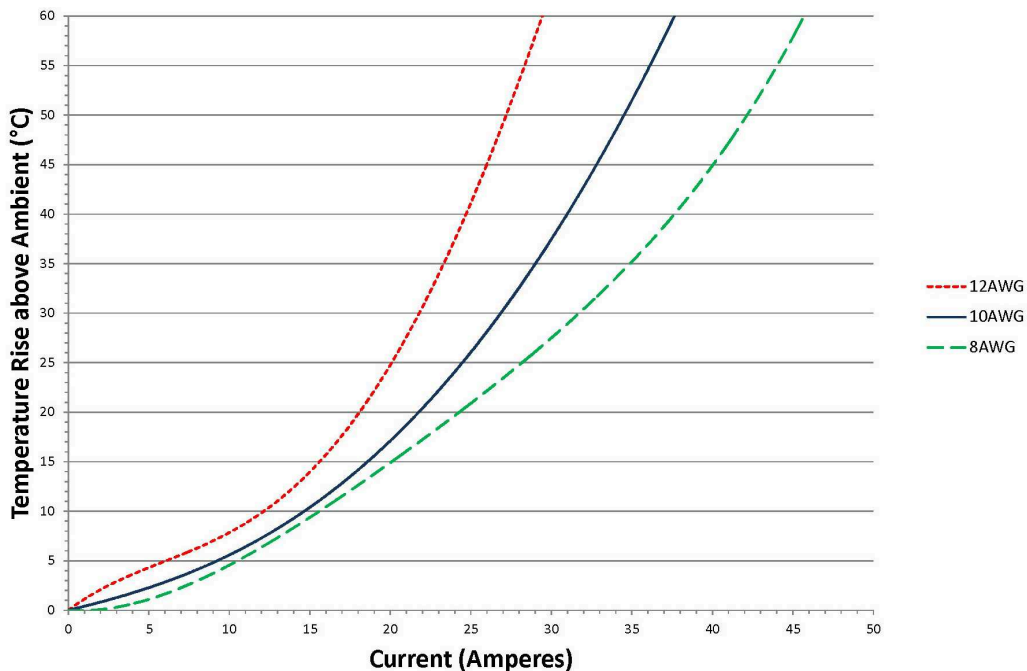
600 Volts AC

4.2 CURRENT AND APPLICABLE WIRES

AWG	Amps	Insulation Outside Diameter
12	See Chart	3.90-4.85mm (.153-.191")
10	See Chart	3.90-4.85mm (.153-.191")
8	See Chart	6.30-6.70mm (.248-.264")

Note: The below curves were developed using fully loaded connector pairs and are presented as a guideline. The end user must evaluate the performance of the connector pair in actual application to determine the suitability and actual performance.

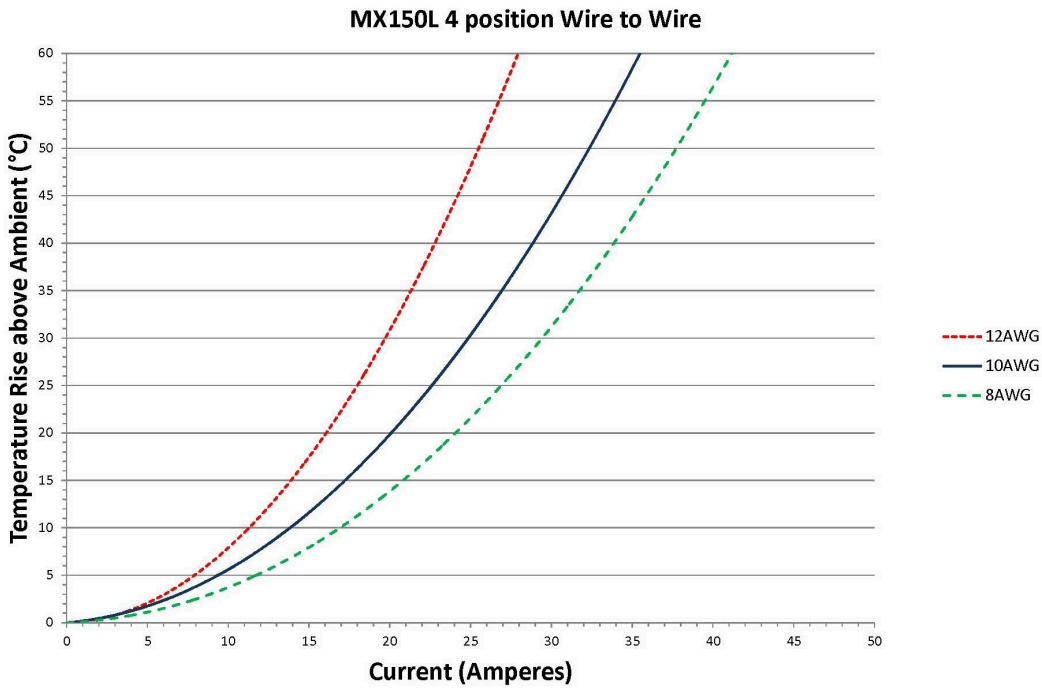
MX150L 2 position Wire to Wire



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4.3 TEMPERATURE

Operating: - 40°C to + 120°C
 Non-operating: - 40°C to + 120°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA .	30 milliohms MAXIMUM [initial]
2	Insulation Resistance	Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	20 Megohms MINIMUM
3	Dielectric Withstanding Voltage	Unmate connectors: apply a voltage of {two times the rated voltage plus 1000 volts} VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown; current leakage < 5 mA
4	Temperature Rise	Mate connectors: measure the temperature rise at the rated current after 4 hours and temperature stabilizes.	Temperature Rise: +60°C MAXIMUM {Total Temperature: 100°C MAXIMUM @ Rated Current}

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5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Terminal Insertion and Withdrawal Forces	Insert and withdraw terminal (male to female) at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	15 N (3.4 lbf) MAXIMUM insertion force & 9 N (2.0 lbf) MINIMUM withdrawal force
6	Connector Mate and Unmate Forces	Mate and unmate connector (male to female) at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	62 N (13.9 lbf) MAXIMUM insertion force & 111 N (25.0 lbf) MINIMUM withdrawal force
7	Terminal Retention Force (in Housing w/TPA) for Wire to Wire & Panel Mount Assys	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	111 N (25 lbf) MINIMUM withdrawal force
	Terminal Retention Force (in Housing) for PCB Header Assys	Axial push out force on the PCB pin in the housing at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	67 N (15 lbf) MINIMUM withdrawal force
8	Durability	Mate connectors up to { 25 cycles for tin (non-noble) plating OR 100 cycles for gold (noble) plating} at a maximum rate of 10 cycles per minute prior to Environmental Tests.	10 milliohms MAXIMUM (change from initial)
9	Vibration (Random)	Mate connectors and vibrate from 10 to 1000Hz for 8 hours in each of three mutually perpendicular axes (X, Y, Z).	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
10	Shock (Mechanical)	Mate connectors and shock at 35 g's with $10\frac{1}{2}$ sine wave (10 milliseconds) shocks in the $\pm X$, $\pm Y$, $\pm Z$ axes.	10 milliohms MAXIMUM (change from initial]) & Discontinuity < 1 microsecond
11	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch).	12 AWG 311.5 N (70 lbf) 10 AWG 356 N (80 lbf) 8 AWG 400.5 N (90 lbf) MINIMUM pullout force {Recommended minimum value: 75% of tensile strength of the wire}

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5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
12	Fluid Resistance	Submerge mated connectors for 30 minutes in each of the following automotive fluids: gasoline, diesel fuel, engine oil, E85 ethanol fuel, power steering fluid, automatic transmission fluid, engine coolant, brake fluid	Insulation Resistance 20 Megohms MINIMUM & Visual: No damage or loss of mechanical function
13	IPX7	IPX7 – Submerge mated connectors for 30 minutes under 1 meter of water	No dielectric breakdown; current leakage < 5 mA

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

7.0 APPLICATION TOOLING

7.1 Male Terminal 12 AWG & 10 AWG

- 63895-0400 Fine Adjust Applicator
- 63811-5300 Hand Crimp Tool
- 64016-0170 Hand Crimp Tool

7.2 Female Terminal 12 AWG & 10 AWG

- 63895-0400 Fine Adjust Applicator
- 63811-5300 Hand Crimp Tool
- 64016-0170 Hand Crimp Tool

7.3 Male Terminal 8 AWG

- 63832-5100 Fine Adjust Applicator
- 63811-5400 Hand Crimp Tool
- 64016-0170 Hand Crimp Tool

7.4 Female Terminal 8 AWG

- 63832-5100 Fine Adjust Applicator
- 63811-5400 Hand Crimp Tool
- 64016-0170 Hand Crimp Tool

8.0 OTHER INFORMATION

The MX150L™ Industrial Sealed Connector System is IPX7 rated and conforms to UL 1977, but it is **NOT** suitable for automotive applications with requirements such as USCAR-2, USCAR-25, GMW3191, AK Testing, J2030, Volvo Technology Requirements, and Toyota Connector Spec (TCS)

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