



# PRODUCT SPECIFICATION

## MX150L 12-8 AWG WIRE-TO-WIRE & PANEL MOUNT 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 or Select Gold plated Terminals

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME AND SERIES NUMBERS

- A. 19431 MALE TERMINALS
- B. 19432 WIRE TO WIRE RECEPTACLE ASSYS
- C. 19433 WIRE TO WIRE PLUG ASSYS
- D. 19434 FEMALE TERMINALS
- E. 19436 PANEL MOUNT PLUG ASSYS

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

- A. ALL DIMENSIONS CAN BE FOUND ON THE SALES DRAWINGS
- B. PLASTIC MATERIALS
  - I. HOUSING & RETAINER ARE GLASS-FILLED PBT-BLACK
  - II. TPA & CPA ARE GLASS-FILLED PBT-NATURAL
- C. TERMINAL MATERIALS (PIN/SOCKET) ARE HIGH STRENGTH COPPER ALLOY
- D. PLATINGS ARE TIN OVER NICKEL (B154)
- E. GROMETS ARE LUBRICATED SILICONE 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, 6, 8 pos

- A. SALES DRAWING SD-19432-\*\*\*
- B. PACKAGING DRAWING PK-19432-\*\*\*

#### 3.2 PLUG ASSEMBLIES 2, 4, 6, 8 pos

- A. SALES DRAWING SD-19433-\*\*\*
- B. PACKAGING DRAWING PK-19433-\*\*\*

#### 3.3 PANEL MOUNT PLUG ASSYS 2, 4 pos

- A. SALES DRAWING SD-19436-\*\*\*
- B. PACKAGING DRAWING PK-19436-\*\*\*

#### 3.4 FEMALE TERMINALS 12, 10, 8 AWG

- A. SALES DRAWING SD-19434-\*\*\*
- B. PACKAGING DRAWING PK-19434-\*\*\* (LOOSE PC)

#### 3.5 MALE TERMINALS

- A. SALES DRAWING SD-19431-\*\*\*
- B. PACKAGING DRAWING PK-19431-\*\*\* (LOOSE PC)

<b>REVISION:</b> <b>A</b>	<b>EGR/ECN INFORMATION:</b> EC No: ETC2008-0101 DATE: 2007 / 10 / 12	<b>TITLE:</b> <b>MX150L 12 TO 8 AWG WIRE TO WIRE AND PANEL MOUNT CONNECTOR SYSTEM</b>	<b>SHEET No.</b> <b>1 of 6</b>
<b>DOCUMENT NUMBER:</b> <b>PS-19432-001</b>	<b>CREATED / REVISED BY:</b> <b>WLEUNG</b>	<b>CHECKED BY:</b> <b>RDEROSS</b>	<b>APPROVED BY:</b> <b>RDEROSS</b>

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## 4.0 RATINGS

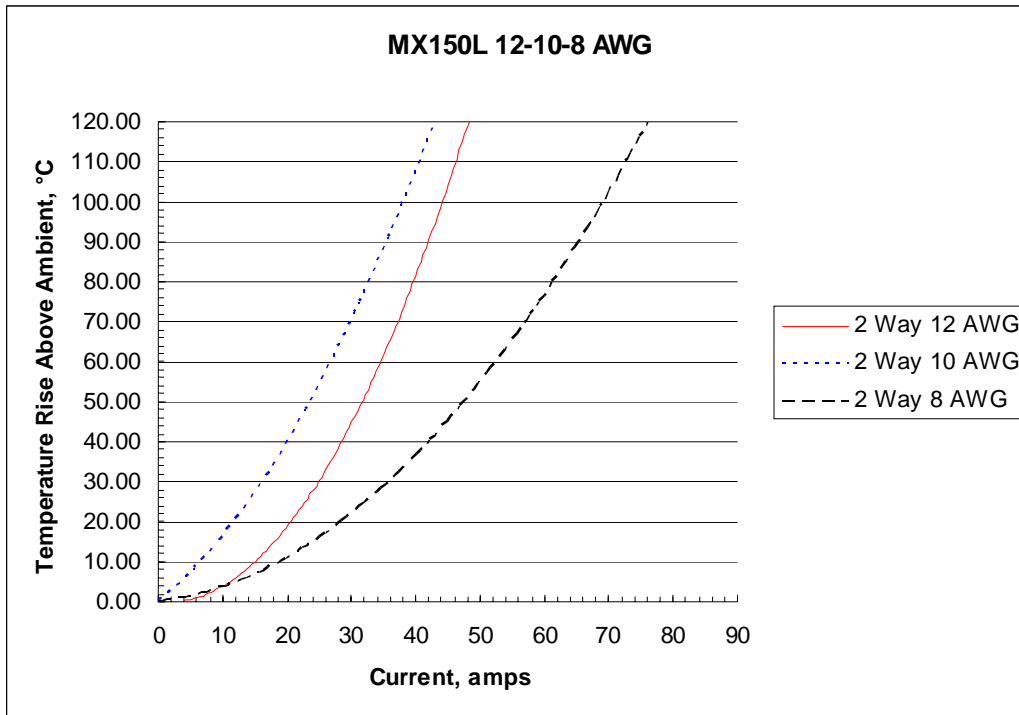
### 4.1 VOLTAGE

600 Volts AC

### 4.2 CURRENT AND APPLICABLE WIRES

AWG	Amps	Outside Insulation Diameter
12	See Chart	3.94-4.45mm (.155-.175")
10	See Chart	3.94-4.45mm (.155-.175")
8	See Chart	6.02mm ( 2.37")

Note: The below curves were developed using averages of 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.

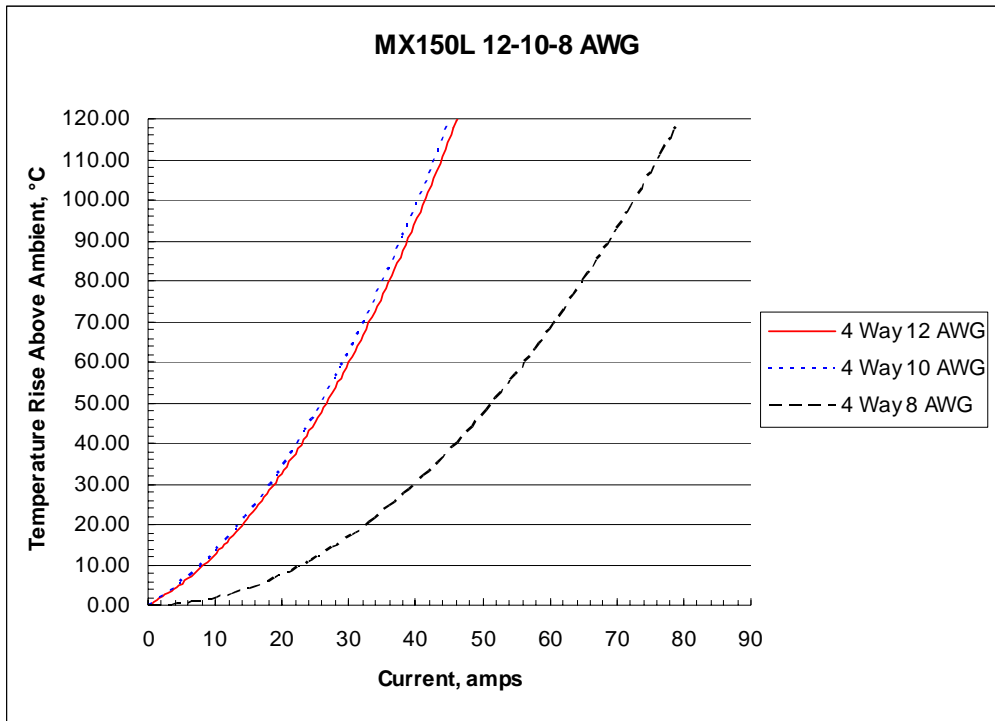


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### 4.3 TEMPERATURE

Operating: - 40°C to + 125°C

Non-operating: - 40°C to + 125°C

## 5.0 PERFORMANCE

### 5.1 ELECTRICAL REQUIREMENTS

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

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## 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	<b>Terminal Insertion and Withdrawal Forces</b>	Insert and withdraw terminal (male to female) at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	TBD
6	<b>Connector Mate and Unmate Forces</b>	Mate and unmate connector (male to female) at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	TBD
7	<b>Terminal Retention Force (in Housing w/TPA)</b>	Axial pullout force on the terminal in the housing at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	TBD
8	<b>Durability</b>	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	<b>Vibration (Random)</b>	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	<b>Shock (Mechanical)</b>	Mate connectors and shock at 35 g's with 10½ sine wave (10 milliseconds) shocks in the ±X,±Y,±Z axes.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
11	<b>Wire Pullout Force (Axial)</b>	Apply an axial pullout force on the wire at a rate of $25 \pm 6$ 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	Shock (Thermal)	Mate connectors; expose to <b>100</b> cycles of: <table border="1"> <thead> <tr> <th>Temperature °C</th> <th>Duration (Minutes)</th> </tr> </thead> <tbody> <tr> <td>-40 +0/-3</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>30 sec. MAXIMUM</td> </tr> <tr> <td>+125 +3/-0</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>30 sec. MAXIMUM</td> </tr> </tbody> </table>	Temperature °C	Duration (Minutes)	-40 +0/-3	30	+25 ±10	30 sec. MAXIMUM	+125 +3/-0	30	+25 ±10	30 sec. MAXIMUM	TBD
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-40 +0/-3	30												
+25 ±10	30 sec. MAXIMUM												
+125 +3/-0	30												
+25 ±10	30 sec. MAXIMUM												
13	High Temperature Exposure	Mate connectors: cycle per USCAR-2 Duration: <b>1008</b> hours exposure Temperature: <b>+125± 3°C</b>	TBD										
14	Salt Spray	Mate connectors: Duration: <b>96</b> hours exposure; Atmosphere: salt spray from a <b>5%</b> solution; Temperature: <b>35 +1/-2°C</b>	TBD										
15	Fluid Resistance	Submerge mated connectors for 30 minutes minimum 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 <b>20</b> Megohms MINIMUM & Visual: No damage or loss of mechanical function										
16	IP67	IP6X - Expose mated connectors to to suspended dust under pressure IPX7 – Submerge mated connector under water 1 meter minimum for 30 minutes minimum duration.	No dielectric breakdown; current leakage < <b>5</b> mA & Visual: No dust or water										

## 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

63832-5000 Fine Adjust Applicator  
63832-5000 T2 Terminator Tooling

### 7.2 Male Terminal 10 AWG

63832-5000 Fine Adjust Applicator  
63832-5000 T2 Terminator Tooling

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# PRODUCT SPECIFICATION

7.3 Male Terminal 8 AWG  
63811-5400 Hand Crimp Tool

7.4 Female Terminal 12 AWG  
63832-5000 Fine Adjust Applicator  
63832-5000 T2 Terminator Tooling

7.5 Female Terminal 10 AWG  
63832-5000 Fine Adjust Applicator  
63832-5000 T2 Terminator Tooling

7.6 Female Terminal 8 AWG  
63811-5400 Hand Crimp Tool

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