PRODUCT SPECIFICATION

MX150 2X6 Panel Mount Connector

1.0 SCOPE

This specification covers the 3.50 mm (0.138 inch) centerline (pitch) dual row sealed bulkhead connection system terminated with 14 to 22 AWG wire using crimp technology, with Gold to Gold Terminal interface.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME

MX150 2X6 Panel Mount Connector

SERIES NUMBER

47725

2.2 DIMENSIONS, MATERIALS AND MARKINGS

For the products, please see sales drawing listed in below form for information on dimensions, material and marking

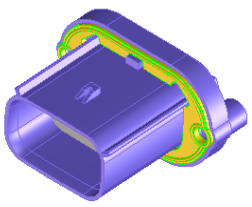
Part Numbers	Drawing
477251310, 477251330, 477251340	SD-47725-130
477252010, 477252030, 477252040, 477252110 477252130, 477252140	SD-47725-210
477256010, 477256030, 477256040, 477257010, 477257030, 477257040	SD-47725-601

2.3 SAFETY AGENCY APPROVALS

UL File Number	Not Applicable
CSA File Number	Not Applicable
TUV License Number	Not Applicable

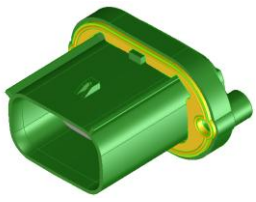
477251310(grey gasket)
477252010(black gasket)
477252110(grey gasket)
477256010(blue gasket)
477257010(blue gasket)

Polarization A



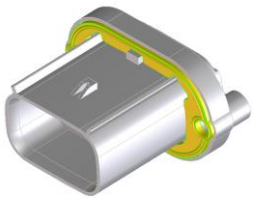
477251320(grey gasket)
477252020(black gasket)
477252120(grey gasket)
477256020(blue gasket)
477257020(blue gasket)

Polarization B (not available)



477251330(grey gasket)
477252030(black gasket)
477252130(grey gasket)
477256030(blue gasket)
477257030(blue gasket)

Polarization C



477251330 (grey gasket)
477252040(black gasket)
477252140(grey gasket)
477256040(blue gasket)
477257040(blue gasket)

Polarization D

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Description	Document Number
MX150 2X6 Panel Mount Connector	SD-47725-130 SD-47725-210 SD-47725-601
Packaging specification	RPK-47725-001
Application specification	AS-47725-001
Terminal Product Specification	PS-33012-002
MX150 Blade Terminal	SD-33000-001
MX150 2x6 Receptacle Connector Assembly	SD-33472-0002
MX150 Receptacle Terminal	SD-33012-002

4.0 RATINGS

4.1 VOLTAGE
500 VDC MAXIMUM

4.2 CURRENT AND APPLICABLE WIRES
See the Terminal Product Specification listed in section 3.0

4.3 TEMPERATURE
Ambient Operating Temperature: - 40°C to + 125°C (On Engine)

4.4 VIBRATION CLASS
USCAR2 (Rev 5) - Mechanical Shock & Vibration Class 2(on Engine/transmission)

4.5 SEALING CLASS
GMW3191 December 2007 Sealing Class 3 (High-pressure spray protected)

5.0 PERFORMANCE
Performance is based on the ‘panel mount connector ‘bolted to a ‘machined aluminum fixture’ with a Torque of 1.7+/- 0.2 Nm per AS-47725-001.

The aluminum fixture has the following characteristics:

a) Surface finish, Ra = 30 micro meters maximum
b) Flatness = 0.25mm maximum
c) Surface cleanliness and other requirements see AS-47725-001

Bolt is EJOT P/N - 4239412801

Since specific characteristics of the ‘Panel’ and installation can influence the performance of the panel seal, end user is required to ensure the chosen ‘Panel characteristics’ are appropriate and validate for their individual applications.

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Dry circuit resistance**	Apply the open circuit voltage of 20mV and100mA current limit. (GMW3191 section 4.17)	$R_{Total\ Connection}$ Dry circuit **8** mΩ MAX
2	**Isolation resistance**	Apply a voltage of 500VDC between adjacent terminals. (GMW3191 section 4.19)	All measured isolation resistances shall be > 100 MΩ.
3	**Dielectric strength**	Apply an AC rms voltage of 1000 Volts at 50 or 60 Hz or a DC voltage of 1600 Volts across each adjacent cavity for at least 60 seconds, and between the terminals and the metal foil for at least 60 seconds. (GMW3191 section 4.20)	No breakdown or flash over occur

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
4	**Terminal to connector engagement force**	Apply an axial insertion force on the terminal at a uniform rate of **50 ± 10** mm/min. (GMW3191 section 4.7)	**15**N Max.(TPA in open position)
			30N Min.(TPA in fully seated position)
5	**Terminal from connector extraction force**	Apply an axial pullout force on the terminal in the housing at a uniform rate of **50 ± 10** mm/min (GMW3191 section 4.9)	**50**N Min.(TPA in open position)
			80N Min.(TPA in fully seated position)
			80N Min.(Moisture conditioning, TPA in fully seated position)
			70N Min.(Thermal aging, Temperature humidity cycling, TPA in fully seated position)
6	**Miscellaneous component engage/disengage force (TPA)**	Insert and pull TPA at a uniform rate of **50 ± 10** mm/min (GMW3191 section 4.12)	**20**N Min.(TPA pre-lock force without terminal)
			60N Max.(TPA closing force with properly assembled terminal)
			60N Min.(TPA closing force with one improperly assembled terminal)
			25N Min.(Closed TPA locking)

5.2 MECHANICAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
7	**Connector to connector engagement force**	Mate connector together at a uniform rate of **50 ± 10** mm/min (GMW3191 section 4.11)	**75**N Max.
8	**Locked connector disengagement force**	Pull the mated connector apart at a rate of **50 ± 10** mm/min (GMW3191 section 4.13)	**120**N Min
9	**Unlocked connector disengagement force**	Pull the mated connectors apart at a rate of **50 ± 10** mm/min (GMW3191 section 4.14)	100N Max. (locking feature disengaged)
			100N Max. (locking feature engaged)

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
10	**Thermal aging**	Expose mated connectors to **125**°C for 1008 hours (GMW3191 section 4.21)	1. Total connection Resistance **8** mΩ Max. 2. Appearance: no damage
11	**Thermal shock**	Mate connectors per durability, expose to **300** cycles of: Temperature °C / Duration (Minutes) **-40** / **30** **+125** / **30** (GMW3191 section 4.22)	1. No discontinuities > **7**Ω for more than **1**μS 2. Total connection Resistance **8**mΩ Max 3. Appearance: no damage
12	**Temperature /humidity cycling**	Mate connectors per durability and expose connector system to ten **24**-hour cycles of combined heating and humidity exposure -**40**°C and **125**°C at **95**% to **99**% RH (GMW3191 section 4.23)	1. Total connection Resistance **8**mΩ Max. 2. Appearance: no damage
13	**Mechanical shock**	Expose mated connectors to shock with half sine wave: **Test No** / **1** **Acceleration[g]** / **35** **Nominal shock Duration [ms]** / **7.5** **Number of shocks per axis, (positive)** / **10** (USCAR Rev 5 section 5.4.6.3)	Samples are evaluated Only after completion of the Vibration and Thermal cycling test

5.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
14	**Vibration with thermal cycling**	Test duration: **8** hours per axis (USCAR Rev 5 section 5.4.6.3-D)	1. No discontinuities > **7**Ω for more than **1**µS 2. Total connection Resistance **10**mΩ Max 3. Appearance: no damage
15	**Submersion**	Heat the samples for **30** minutes at **125**°C, then immerse the heated test samples into **23±5**°C de-ionized water to a depth of **100** mm for 1 hour (GMW3191 section 4.29)	1. The leakage current **5** µA Max. 2. Appearance: no damage
16	**Pressure/ vacuum leak**	Pressure: 48 kPa Vacuum: 28 kPa (GMW3191 section 4.30)	1. No loss in the applied Pressure and no bubbles visible(positive pressure) 2.Isolation resistance 100 mΩ Min(Negative pressure) 3. Appearance: no Evidence of water present in the interior of either mated connector
17	**High- pressure spray (With Wire Dress Cover at Receptacle Side)**	Temperature: +80±5°C Flow rate: 14 ~ 16 l/min Pressure: 8000~10000 kPa (measured as near as possible to the nozzle aperture) (GMW3191 section 4.31)	1. All measured isolation resistances shall be > 100 MΩ. 2. No trace of water inside Connectors
18	**Fluid resistance**	Submerge connector assemblies in the following fluids: brake fluid, oil, gasoline, engine coolant, automatic transmission fluid, windshield washer solvent, power steering fluid, diesel fluid, E85 ethanol fuel.	Appearance: no visible Degradation, swelling, cracking or loss of mechanical function evident Seals will swell when submersed in Diesel

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage. For more information refer to appropriate packaging drawing.

Molex represents and warrants to Buyer for a period of one year from the date of delivery of the Products to Buyer that (i) the Products shall conform to the MOLEX specifications for the Products in force at the date of delivery of the Products to Buyer, and (ii) the Products shall be of free from material defects in materials and manufacturing.

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