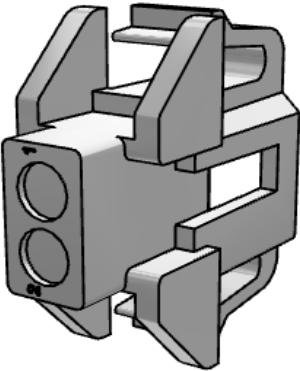
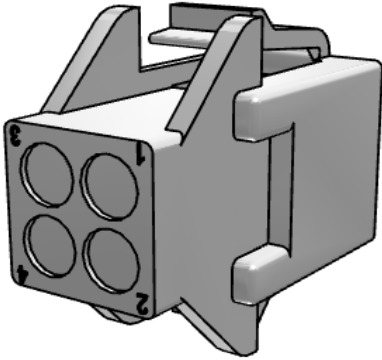
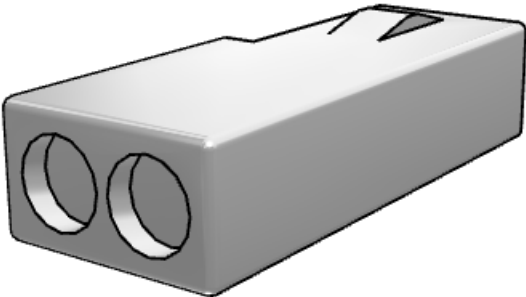
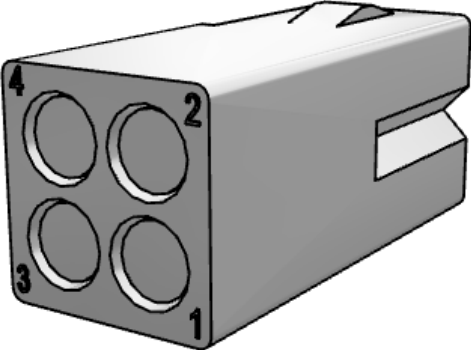


STANDARD .062"+ WIRE TO WIRE CONNECTOR SYSTEM

Single Row Plug Housing	Dual Row Plug Housing
	
Series: 150176	Series: 150177



Single Row Receptacle Housing	Dual Row Receptacle Housing
	
Series: 150178	Series: 150179

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Male Crimp Terminal	Female Crimp Terminal
	
Series: 150180	Series: 150181

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1.0 SCOPE

This Product Specification covers the 3.68 mm centerline (pitch) Wire to Wire connector system terminated with 16 to 22 AWG wire using crimp technology.

2.0 PRODUCT DESCRIPTION

2.1 DESCRIPTION, SERIES NUMBER, AND LINKS

DESCRIPTION	SERIES NUMBER
Single Row Plug Housing	150176
Dual Row Plug Housing	150177
Single Row Receptacle Housing	150178
Dual Row Receptacle Housing	150179
Male Crimp Terminal	150180
Female Crimp Terminal	150181

2.2 DIMENSIONS, MATERIALS, PLATINGS

Refer SD-150180-0001 for Male terminal and SD-150181-0001 for Female terminal and SD-150176-001 for (Single row plug housing), SD-150177-001for (Dual row plug housing), SD-150178-001 for (Single row receptacle housing) and SD-150179-001 for (Dual row receptacle housing).

2.3 ENVIRONMENTAL CONFORMANCE

To find product compliance information:

- [Go to molex.com](#)
- Enter the part number in the search field.
- At the bottom of the page go to “Environmental” to see compliance status.

2.4 SAFETY AGENCY LISTINGS

UL File Number: E29179

3.0 APPLICABLE DOCUMENTS AND SPECIFICATION

3.1 MOLEX DOCUMENTS

- [Molex Quality Crimping Handbook Order No. 63800-0029](#)
- [Molex Solderability Specification SMES-152](#)
- [Molex Heat Resistance Specification AS-40000-5013](#)
- [Molex Moisture Technical Advisory AS-45499-001](#)
- [Molex Package Handling Specification 454990100-PK](#)

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Application Tooling Specification Sheet 16 AWG- UL1061: ATS-639036100
 Application Tooling Specification Sheet 18 AWG- UL1061: ATS-639036200
 Application Tooling Specification Sheet 18 AWG- UL1007: ATS-639036100
 Application Tooling Specification Sheet 20 AWG- UL1061: ATS- 639036400
 Application Tooling Specification Sheet 22 AWG- UL1061: ATS- 639036500
 Application Tooling Specification Sheet 20-22 AWG- UL1007: ATS- 639036300
 Refer section 7.0 for Environmental Test Sequences
 ATS – Application Tooling Specification*

*Application Tooling Specification for terminals is not provided in this document. ATS for terminals can be available from respective terminal part number page in Molex.com

3.2 INDUSTRY DOCUMENTS

EIA-364-1000
 UL-60950-1

4.0 ELECTRICAL PERFORMANCE RATINGS

4.1 VOLTAGE

250 Volts AC (RMS) or DC.

* This connector voltage meets the connector level provided by the safety agency. For application voltage requirements per UL-60950 or other standards, the creepage & clearance also needs to be determined based upon pads/traces on the PCB.

4.2 APPLICABLE WIRES

AWG	Outside insulation diameter	
	UL1007	UL1061
16	NA	2.02mm ± 0.1
18	2.10mm ± 0.1	1.70mm ± 0.1
20	1.80mm ± 0.1	1.46mm ± 0.1
22	1.60mm ± 0.1	1.28mm ± 0.1

Note: Above mentioned wire outer diameter is for reference. Refer Application spec for details.

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4.3 CURRENT RATINGS*

Ratings shown below represent maximum current carrying capacity of a fully loaded connector with all circuits powered using UL1061/UL1007 stranded wire. Ratings are based on a 30 °C maximum temperature rise limit over ambient (see section 5.1.4 for specification) without derating. Current is dependent on connector size, ambient temperature, and related factors. Actual current rating is application dependent and should be evaluated for each use.

AWG	1 CIRCUIT	2 CIRCUIT	3 CIRCUIT	4 CIRCUIT	6 CIRCUIT	8 CIRCUIT	10 CIRCUIT
16	11.5 A*	11.5 A	10 A*	9 A*	8.5 A	8.0 A*	7.5 A
18	8.5 A*	8.5 A*	7 A*	6.5 A*	6.5 A*	6.0 A*	6.0 A*
20	7.5 A*	7.5 A*	6 A*	5.5 A*	5.5 A*	5.0 A*	5.0 A*
22	6.5 A*	6.5 A	5.5 A*	5.0 A*	5.0 A	4.5 A*	4.5 A

Interpolated values

4.4 TEMPERATURE

Operating Temperature Range* (includes T-Rise from applied current): - 40°C to + 105°C

4.5 DURABILITY

Plating Type	Number of Cycles
Tin Plated	25

*As tested in accordance with EIA-364-1000 test method (see section 6.2 item 3 of this specification).
Durability per EIA-364-09*

5.0 QUALIFICATION

Laboratory condition, sample selection and test sequences are in accordance with EIA-364-1000.

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6.0 PERFORMANCE

6.1 ELECTRICAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6.1.1	Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA. EIA-364-23C	10 milliohms MAXIMUM [initial]
6.1.2	Insulation Resistance	Mate connectors: Apply a voltage of 500 VDC between adjacent terminals and between terminals to ground. EIA-364-21C	1000 Megohms MINIMUM
6.1.3	Dielectric Withstanding Voltage	Apply a voltage of 1500 VAC for 1 minute between adjacent terminals and between terminals to ground. EIA-364-20D	No breakdown. current leakage < 5 mA
6.1.4	Temperature Rise	Mate connectors: measure the temperature rise at the rated current EIA-364-70 Method 2	Temperature rise: +30°C MAXIMUM Above ambient
6.1.5	Temperature Rise (18day Current Cycling) EIA-364-55	Mate connectors: measure the temperature rise at the rated current after: 1) 96 hours (steady state) 2) 240 hours (45 minutes ON and 15 minutes OFF per hour) 3) 96 hours (steady state)	Temperature rise: +30°C MAXIMUM

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REVISION: B2	ECM INFORMATION: EC No: 666346 DATE: 06/08/2021202	TITLE: PRODUCT SPEC STANDARD .062"+ WTW CONNECTOR				SHEET No. 7 of 14
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6.2 MECHANICAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6.2.1	Connector mate and Unmate forces (initial)	Mate and unmate connector (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute. EIA-364-13E	Mate force: 9 N/circuit maximum and Un mate force:4.5 N/circuit minimum
6.2.2	Terminal Retention Force (in Housing)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	50N MINIMUM retention force (Derived based on actual terminal check)
6.2.3	Durability EIA-364-1000 Test Group-7	Insert and withdraw connectors 25 times at a maximum rate of 10 cycles per minute prior to environmental tests.	Contact Resistance 10 milliohms MAXIMUM (change from initial) & Visual: No Damage
6.2.4	Vibration (Random) Test Group-3	Mate connectors and vibrate per EIA 364-28, test condition VII. Letter D. (Acceleration 3.1 g)	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
6.2.5	Shock (Mechanical) Test Group-3	Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X, ±Y, ±Z axes (18 shocks total). EIA-364-27, Test Condition A	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
6.2.6	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ inch) as Per EIA-364-08	MINIMUM pullout forces 16 AWG - 89 N 18 AWG - 89 N 20 AWG - 36 N 22 AWG - 36 N (Per UL 1977)
6.2.7	Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	11 N Maximum

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6.2 MECHANICAL PERFORMANCE (CONT.)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6.2.8	Panel Insertion Forces	Insert the connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	52 N Max.
6.2.9	latch Retention force with Panel	Insert the connector in to panel and pull at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	200 N Min
6.2.10	Impact Housings	Drop the housings from 1meter height.	No Breakage, No Damage

6.3 ENVIRONMENTAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT										
6.3.1	Temperature Life Group-1	See next page for the test condition details	10 milliohms MAXIMUM (change from initial) & Visual: No Damage										
6.3.2	Shock (Thermal) Group 2	Mate connectors; expose to 5 cycles of: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Temperature °C</th> <th>Duration (Minutes)</th> </tr> </thead> <tbody> <tr> <td>-55 +0/-3</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> <tr> <td>+85 +3/-0</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> </tbody> </table>	Temperature °C	Duration (Minutes)	-55 +0/-3	30	+25 ±10	5 MAXIMUM	+85 +3/-0	30	+25 ±10	5 MAXIMUM	10 milliohms MAXIMUM (change from initial) & Visual: No Damage
Temperature °C	Duration (Minutes)												
-55 +0/-3	30												
+25 ±10	5 MAXIMUM												
+85 +3/-0	30												
+25 ±10	5 MAXIMUM												
6.3.3	Humidity (Cyclic) Group 2	Mate connectors: And Perform 24 cycles between Temperature 25 ± 3°C at 80 %± 3% Relative humidity and 65 ± 3°C at 50% ± 3% Relative humidity; Ramp time of 0.5 hours and dwell time of 1.0 hour; Dwell times start when the temperature and humidity have Stabilized within the specified levels.	10 milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at 500 VAC & Insulation Resistance: 1000 Megohms MINIMUM & Visual: No Damage										

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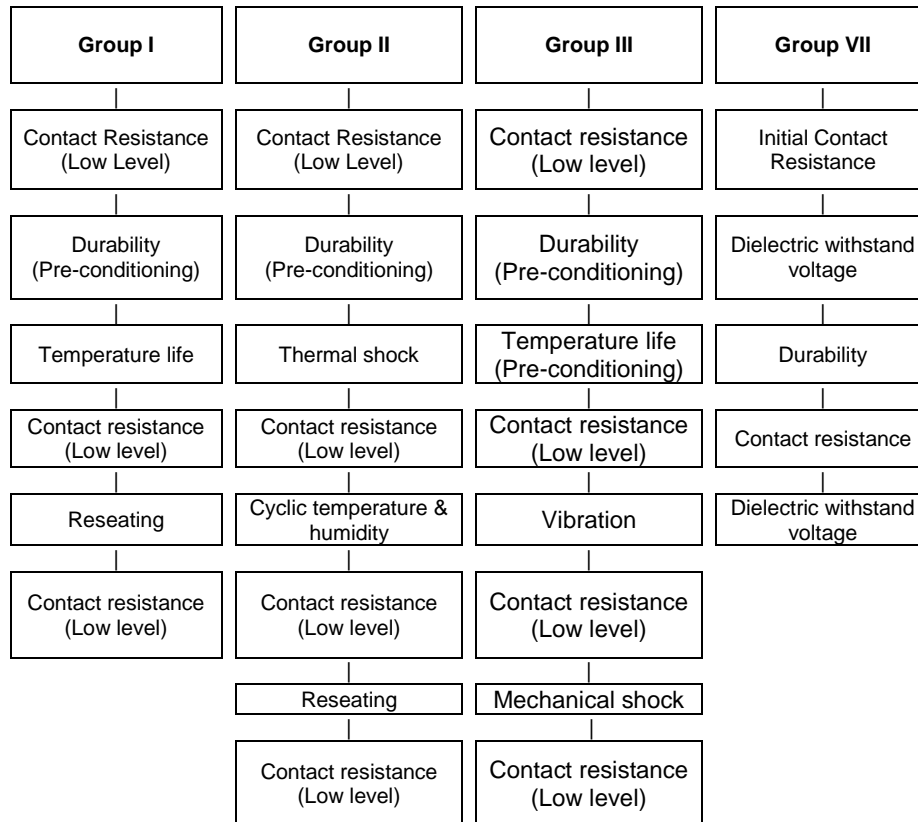
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7.0 TEST SEQUENCE

Reliability Test Sequences Per EIA-364-1000



Temperature Life:

Mate connectors and expose to +105°C for 132hrs (preconditioning) and then +105°C for 228hrs (Temperature Life).

Note: Temperature preconditioning applied for Test group 3 is +105°C for 132hrs.

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Individual Tests

Connector Mate and Un-mate Forces

Terminal Retention Force

Wire Pullout force

Terminal Insertion Force

Panel Insertion & Withdrawal Forces

Latch Retention force with panel

Impact Housings

Temperature Rise

T-Rise Profiling

Steady State Temperature Rise

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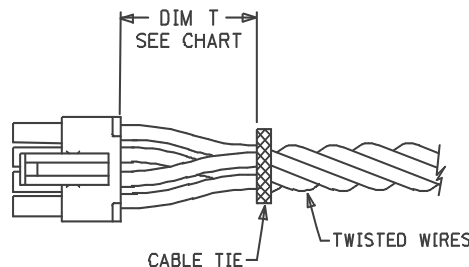
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8.0 PACKAGING

Parts shall be packaged to protect the parts from damage during standard shipping, storage, and handling. Refer Molex.com specific part number webpage to get the exact packaging document for that item.

9.0 CABLE TIE AND / OR TWIST TIE LOCATION

CKT Sizes	Dim T Min.
2-4	.500 (12.70)
5-8	.750 (19.10)
9-12	1.000 (25.40)



The "T" dimension defines a "free" length of wire, or a length of wire that is not subject to significant bias by external factors such as a wire tie, wire twisting, or other means of bending or deforming of the wires that repositions them from their natural relaxed state or location where they enter the housing. Wires are to be dressed in such a manner to allow the terminals to float freely in the pocket. This dimension is general recommendation and may need to be adjusted for different wire gauges and wire type and insulation thickness and insulation material.

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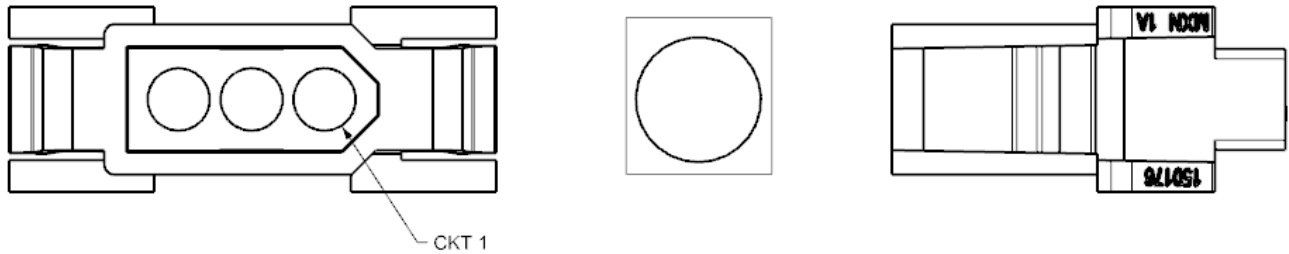
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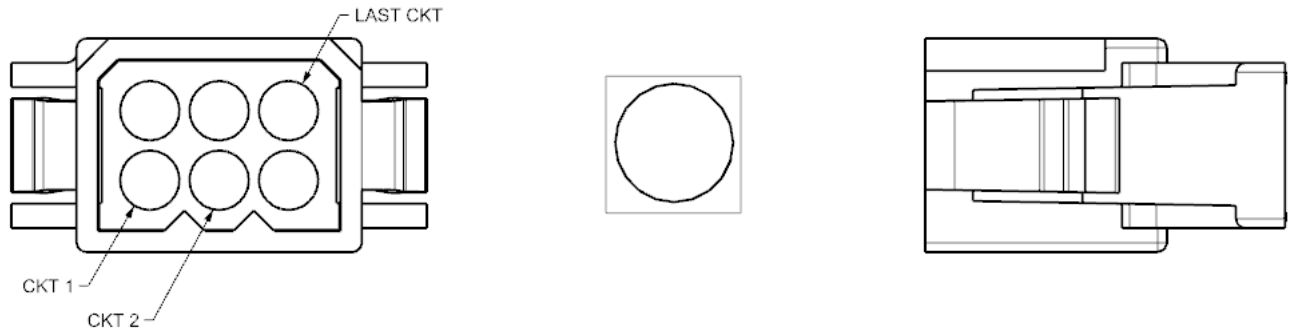
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TEMPLATE FILENAME: 1703070003 REV A						

10.0 POLARIZATION AND KEYING OPTIONS

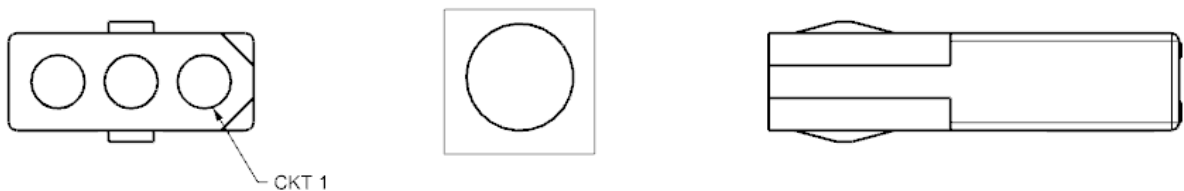
10.1 Single Row Plug Housing (Series: [150176](#))



10.2 Dual Row Plug Housing (Series: [150177](#))



10.3 Single Row Receptacle Housing (Series: [150178](#))



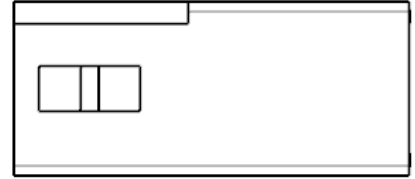
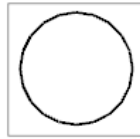
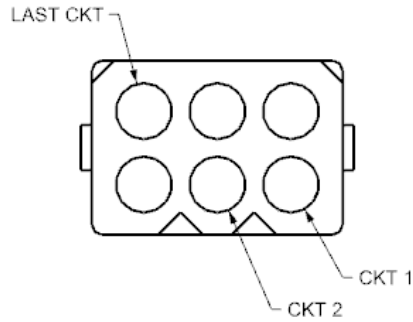
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10.4 Dual Row Receptacle Housing (Series: [150179](#))



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