POWER DOUBLE LOCK (PDL) CONNECTORS

Quick Reference Guide

The power double lock connectors are available in wire-to-wire (including free-hanging and panel mount) and wire-to-board configurations. This connector system consists of plug and cap housings for wire termination, optional double lock plates, crimp contacts and PC board pin headers, and is available in a contact centerline spacing of 3.96 mm for wire-to-wire and centerline spacing of 3.96 mm, 6.5 mm, and 13.00 mm for wire-to-board. The power double lock connector system accepts 26-16 AWG wire with insulation diameters up to 3.1 mm and is rated up to 14 Amps per line.

FEATURES & BENEFITS

- Discrete wire interconnect available in 1-12 position wire-to-board and wire-to-wire
- Multiple colors available for ease of connector identification during assembly and maintenance
- Audible click when contact is fully inserted into the housing
- Polarizing ribs on plug housing allows for proper mating
- Board-mounted headers are compatible with resin or conformal coatings — No drain holes
- Solder tail kink along with the polarization peg (boss) feature, secures the header on the board during the solder process
- UL recognized, CSA certified, and VDE approved
- **TPA** and **GWT** available

PRODUCT APPLICATIONS

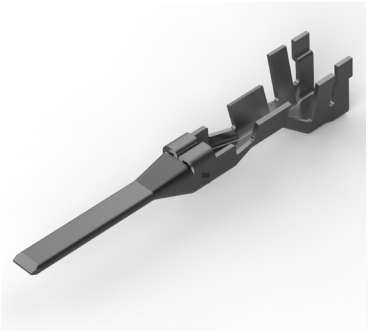
- Household appliances
- Gaming
- Vending
- Garage door openers
- Security systems
- Industrial controls
- HVAC system controls
- Fan modules
- Business equipment
- Small UAV

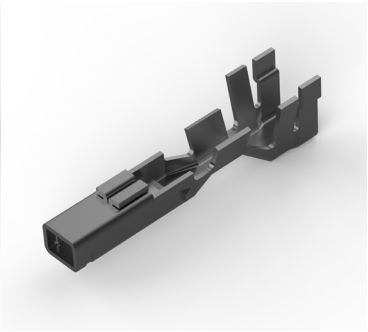
CONTACTS

Wire Range		Wire Insulation Dia. mm	Tab		Receptacle		Applicator Part Number					
AWG	mm^2		Strip Form	Loose Piece	Strip Form	Loose Piece	Automatic	Semiautomatic		Hand Tool	Extraction Tool	
								K press	G press		Tab	Receptacle
26-22	0.14-0.34	1.30-2.00	177916-1	179594-1	2232902-1	179592-1	680283-1	680283-2	680283-3	91567-1	234914-1	234912-1
					177914-2*	179592-2*						
20-16	0.51-1.38	2.00-3.10	177917-1	179595-1	2232901-1	179593-1	680286-1	680286-2	680286-3	91569-1		
					177915-2*	179593-2*						

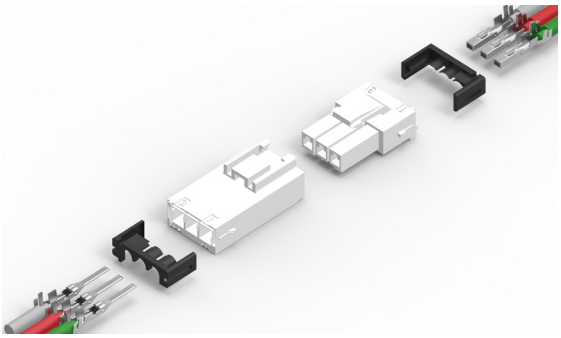
See Application Specification 114-5175 & Instruction Sheet 411-5638

* Part Number suffix -2 represents high contact pressure type





The PDL contacts are phosphor bronze with pre-tin plating and designed without lances to prevent entanglement of contacts with one another. The receptacle contact gets loaded into the plug housings and the tab contact gets loaded into cap housings.



The semi-inner locking system of the PDL design helps eliminate unmating by external force and the audible click helps indicate the connector system is fully latched. The smooth compact design prevents snagging when mated.

PLUG HOUSINGS**

No. of Pos.	No. of Rows	Base Part No.	Available Color Options (Part No. Suffix)[4]					Double Lock Plate Part No.[1]
3.96 mm Centerline Spacing								
1	1	316768	-1	-2	-4	-6	-9	316770-1
2	1	177898[2]	-1	-2	-4	-6	-9	177918-1
3	1	177899[2]	-1	-2	-4	-6	-9	177919-1
4	1	316501[2]	-1		-4	-6		177920-1
4	2	177900[2]	-1		-4	-6		177918-1
6	2	177901[2]	-1	-2	-4	-6		177919-1
8	2	177902[2]	-1		-4	-6		177920-1
9	3	177903[2]	-1		-4	-6		177919-1
10	2	177904	-1		-4	-6		177921-1
12	3	177905	-1		-4	-6		177920-1
6.5 mm Centerline Spacing								
2	1	1939344	-1					316061-1
3	1	179938	-1	-2	-4	-6	-9	316062-1
4	1	179939	-1		-4	-6	-9	316063-1
4	2	179861[3]	-1		-4	-6		316061-1
6	2	179862[3]	-1		-4	-6		316062-1
12	2	917354[3]	-1					353891-1
7.92 Centerline Spacing								
2	1	177899[2]	-1	-2	-4	-6	-9	177919-1
13.0 mm Centerline Spacing								
2	1	179938	-1	-2	-4	-6	-9	316062-1

Notes:
1. Refer to No. of Rows to specify the number of double lock plates required.
2. Available in Type II lock, see catalog 82181 for details.
3. Available in Type B lock, see catalog 82181 for details.
4. Color Key Code: -1 Natural, -2 Red, -4 Yellow, -6 Blue, -9 Black

**GWT version products are also available, please contact our sales representatives for more information

CAP HOUSINGS**

3.96 mm Centerline Spacing									
No. of Pos.	No. of Rows	Free-Hanging	Panel Mount	Available Color Options (Part No. Suffix)					Double Lock Plate Part No. [1]
1	1	316769	-	-1	-2	-4	-6	-9	316770-1
2	1	179463	177906	-1	-2	-4	-6	-9	177918-1
3	1	179464	177907	-1	-2	-4	-6	-9	177919-1
4	1	-	316502	-1		-4	-6		177920-1
4	2	179465	177908	-1		-4	-6		177918-1
6	2	179466	177909	-1		-4	-6		177919-1
8	2	179467	-	-1		-4	-6		177920-1
9	3	-	177911	-1		-4	-6		177919-1
10	2	-	177912	-1		-4	-6		177921-1
12	3	1903720	177913	-1		-4	-6		177920-1

Notes: 1. Refer to No. of Rows to specify the number of double lock plates required.
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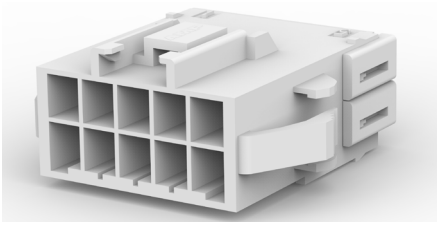
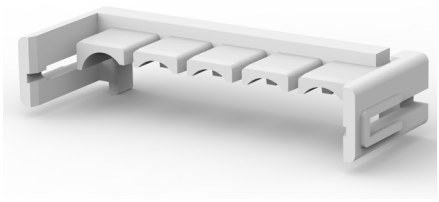


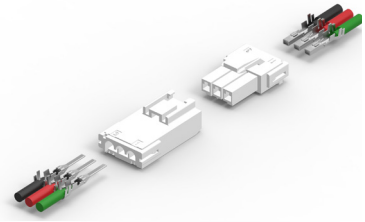


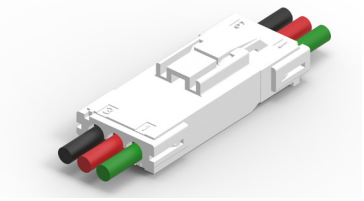
A double lock plate is available for both plug and cap housings to ensure positive loading and to help prevent contact back-out.

HEADERS

3.96 mm Centerline Spacing							
No. of Pos.	No. of Rows	Base Part No.	Available Color Options (Part No. Suffix)				
2	1	179838	-1	-2	-4	-6	-9
3	1	179839	-1	-2	-4	-6	-9
4	2	179840	-1		-4	-6	
6	2	179841	-1	-2	-4	-6	
8	2	917845	-1		-4	-6	
12	3	179843	-1		-4	-6	
6.5 mm Centerline Spacing							
3	1	179846	-1	-2	-4	-6	
4	2	179848	-1	-2	-4	-6	
6	2	179849	-1		-4	-6	
12	2	917353*	-1				
13 mm Centerline Spacing							
2	1	917745	-1		-4	-6	

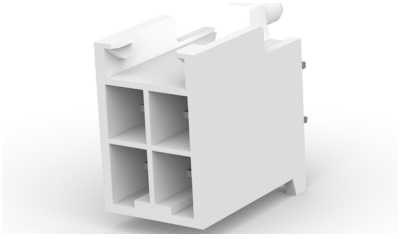
*Available without kink, see catalog # 82181 for details

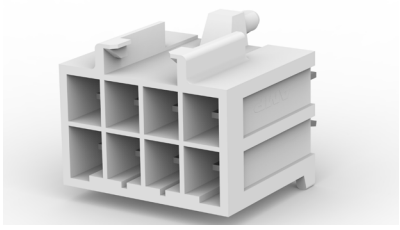




Positive mounting achieved with Double Lock Mechanism:

1. Contact is partially-mounted.
2. Double Lock Plate is set.
3. Contact is fully pushed in as Double Lock Plate is pressed.





The PDL headers offer a kink in the solder tail along with the kink in the mounting boss which secures the header on the board firmly while soldering. Board mounted headers are compatible with resin or conformal coatings (no drain holes).

DESIGN-IN QUESTIONS

1. **What are the current and voltage requirements for your application?**

   The power double lock connector system has a maximum current rating of 14 Amps per line (based on initial t-rise vs. current testing using 16 AWG in a 2 position connector) and is rated for 300 Volts AC/DC wire-to-wire and 50 Volts AC/DC wire-to-board.

2. **What are the wire type and size requirements?**

   The power double lock connector system is approved for use with 26-16 AWG wire with an insulation range between 1.3 mm and 3.1 mm.

3. **What are the number of positions and available space?**

   The power double lock connector system is available in select positions (1-12) on four contact centerline spacings; 3.96 mm, 6.5 mm, 7.92 mm and 13.0 mm. The overall mated length of the free-hanging system is 38.7 mm and the maximum height of the wire-to-board system is 25.5 mm.

4. **What are the operating temperature requirements?**

   The power double lock connector system has a maximum operating temperature of 105°C. For more information regarding operating temperatures refer to Product Specification 108-5410.

5. **Is contact back-out a concern?**

   Do you need confirmation that the contacts are seated? The power double lock connector system offers an optional double lock plate. The purpose of the double lock plate is two-fold: 1) allows contacts to be fully seated in the housing and 2) it helps prevent the possibility of contact disengagement when wires are exposed to external pressure.

6. **Do you need to differentiate this connector from other connectors in the application?**

   The power double lock connector system offers multiple options of colored housings for ease of connector identification during manufacturing and assembly.

7. **What is the benefit of choosing a header with a polarization peg (boss)?**

   The power double lock connector system offers headers with or without polarization pegs. The purpose of this feature is to polarize the headers to the PCB so the header can not be placed on the PCB in the wrong orientation. For more information regarding PCB layout please refer to the header product drawing.

8. **What is the benefit of choosing a high force contact?**

   The power double lock connector system offers high force contacts for use in applications where vibration is prominent. It is important to note that the high force contacts increase the amount of mating force. Refer to Product Specification 108-5410 for more information.

9. **What is the benefit of choosing Lock Type II or Lock Type B (non-standard) latch?**

   - Lock Type II is offered on the 3.96 mm plugs allowing for easier unmating (more finger room to depress the latch).
   - Lock Type B is offered on the 6.5 mm plugs providing a slightly lower profile and can be used when the application will not have to be unmated often.

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