Dynamic Push-In Connectors

All numerical values are in metric units. Dimensions are in millimeters. Figures and illustrations are for identification only and are not drawn to scale

1. INTRODUCTION

This specification covers the requirements for application of Dynamic Push-In Connectors. Applicable wire size and pitch refer Figure 1.

When corresponding with TE Connectivity Personnel, use the terminology provided on this specification to help facilitate your inquiry for information. Basic terms and features of components are provided in Figure 2.

Series	Pitch	Applicable wire		
		Solid	Stranded	Stranded/flexible with ferrule
D2970	5	AWG24-14 0.2-2.5SQ	-	AWG26-14 0.13-2.5SQ

Figure 1

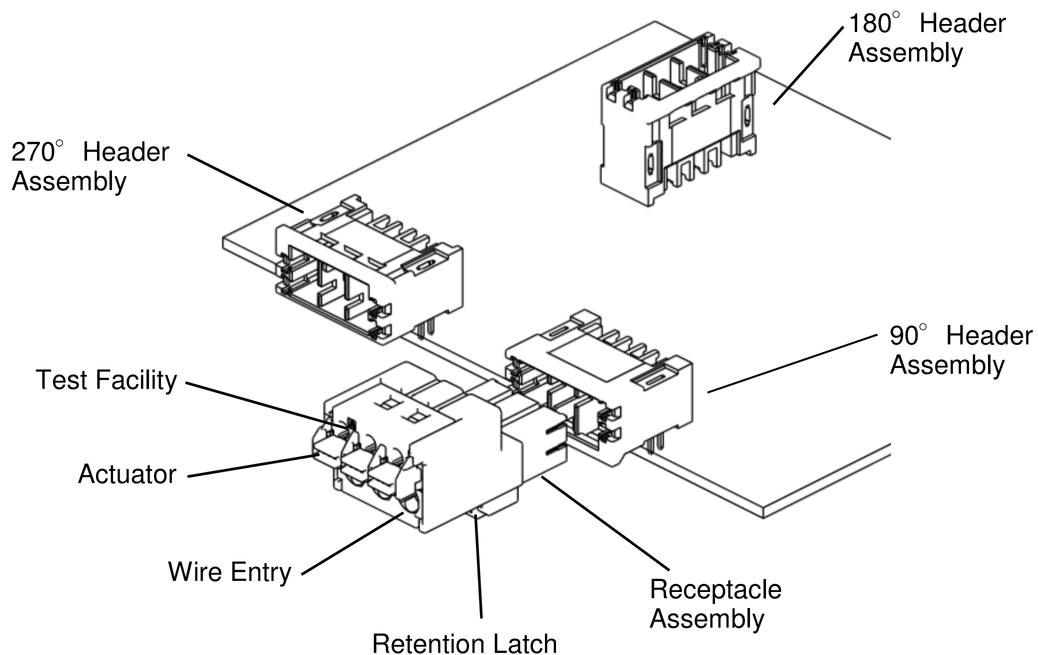

Figure 2(Cont'd)

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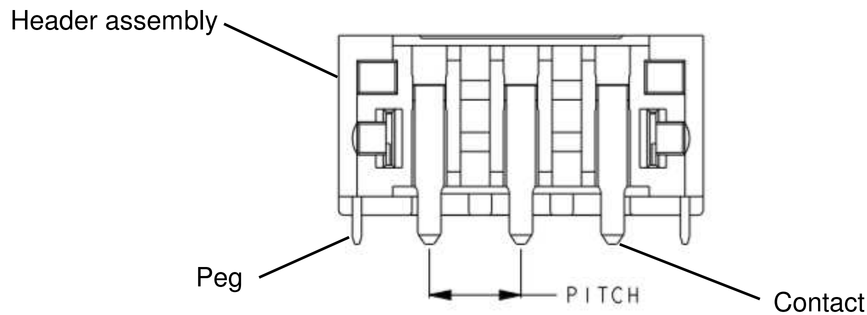

Figure 2(End)

2. REFERENCE MATERIAL

2.1. Customer drawings

Customer Drawings for the connectors are available from the service network. The information contained in Customer Drawings takes priority if there is a conflict with this specification or with any technical documentation supplied by TE connectivity.

2.2. Specifications

Product Specification provides test and performance requirements.

D2970:108-140223

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the pc board connector material.

B. Shelf Life

To prevent damage to these connectors, they should remain in the container until ready for installation. Also, to prevent possible storage contamination, the connectors should be used on a first in, first out basis.

C. Chemical Exposure

Do not store connectors near any chemical listed below as they may cause stress corrosion cracks in the connector.

Alkalies	Ammonia	Citrates	Phosphates Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur Nitrites	Tartrates

3.2. Polarization

Design configuration prevents header and receptacle assemblies from being mated incorrectly.

3.3. PC Board Layout

A. Single connector

Use a pc board with a nominal thickness of 1.6mm. Customer drawings provide a complete definition of pc board layout.

3.4. Wire selection, Preparation and Installation

A. Selection

The connectors will accept wires with conductors of the sizes defined in Figure 3.

B. Strip Length

The wire must be stripped to the proper dimension to ensure correct insertion depth in the connector. Excessive conductor will be exposed if the strip length is too long and entrapment of the insulation of improper termination will result if the strip length is too short. See Figure 3.

C. Installation

Wire insertion process refer to Figure 4. Wire release process refer to Figure 5.

Series	Pitch	Applicable wire			STRIP LENGTH(mm) With ferrule depends on ferrule.
		Solid	Stranded	Stranded/flexible with ferrule	
D2970	5	AWG24-14 0.2-2.5SQ	-	AWG26-14 0.13-2.5SQ	12±0.5

Figure 3

(a) Solid and Stranded/flexible with ferrule

The wire inserts to Wire Entry until the wire stop and the insulation is even with the housing at the wire hole opening.

(b) All wire

The finger or the screwdriver push Actuator straightly, and the wire inserted into the Wire Entry until the wire stop and the insulation is even with the housing at the wire hole opening.

Pull back on the wire to be sure it is secure and check there are no wire strands outside the connectors.

Figure 4

The finger or the screwdriver push Actuator straightly, and pull out the wire by light force.

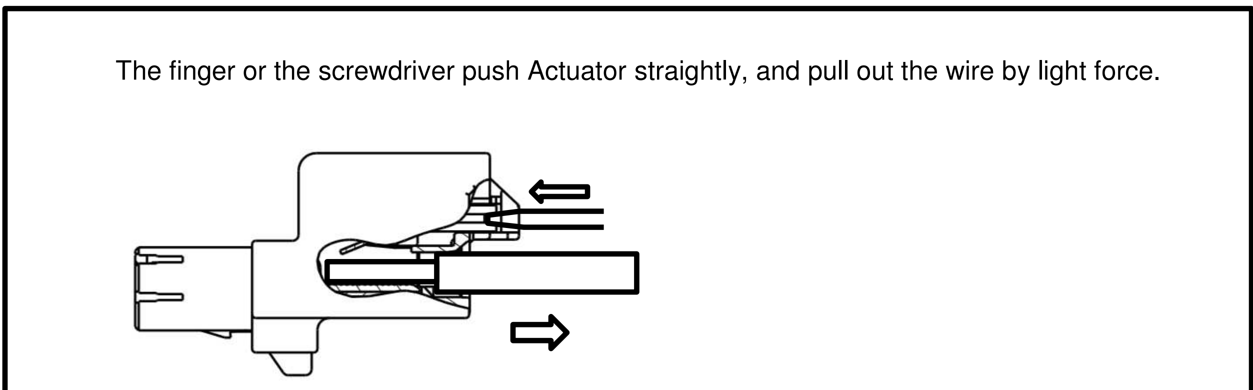

Figure 5

3.5. Soldering

3.5.1. Through Hole Reflow(THR) Connectors

A. Solder Paste Characteristics

1. Alloy type (lead-free solder) shall be compatible with pure tin or gold, for example, SAC 305 (96.6 Sn/3 Ag/0.5 Cu) or SAC 405 (95.5 Sn/4 Ag/0.5 Cu).
2. Flux incorporated in the paste shall be rosin, mildly active (RMA) type.
3. Paste will be at least 80% solids by volume.
4. Mesh designation -200 to +325 (74 to 44 square micron openings, respectively).
5. Minimum viscosity of screen print shall be 5×10% cp (centipoise).
6. Minimum viscosity of stencil print shall be 7.5×10% cp (centipoise).

B. Solder Volume

Referenced Minimum solder volume (Vi) (before curing) is refer to Figure 6.:

Series	Contact	Peg
D2970	5.7mm^3	5.6mm^3

Adjust solder volume to meet appearance requirement, is defined by user.

Figure 6

C. Process

The SHR connectors can be soldered using non-focused infrared reflow (IR) or equivalent soldering techniques. The temperatures and exposure time shall be as specified in Figure 7.

SOLDERING PROCESS	TEMPERATURE	IMMERSION DURATION
IR	260±5℃	10±1 Seconds

Figure 7

The reflow profile is given in Figure 8.

Average Ramp Rate and Ramp to Peak	Preheat		Time Over Liquids (217℃)	Peak Temperature	Time Within 5℃ of Peak	Ramp (Cool Down)	Time to Peak (25℃)
	Tempe rature	Time					
3℃/Sec max	150-200℃	60-180 Sec	60-150 Sec	260+0/-5℃	20-40 Sec	6℃/Sec Max	8 Min/Max

Figure 8

3.5.2. Through-Hole Connectors

A. Process

The through-hole connectors can be soldered using wave soldering or equivalent soldering techniques.

The temperatures and exposure time shall be as specified in Figure 9.

SOLDERING PROCESS	MAXIMUM TEMPERATURE	IMMERSION DURATION
Wave	260±5℃ (Wave)	10±0.5 Seconds
Manual (Soldering Iron)	360±10℃	3±0.5 Seconds Without Pressure

Figure 9

3.6. Repair

Damaged wires can be removed from receptacle connectors and replaced. If connectors are damaged, it can not be repaired.

3.7. Mating with Header Assembly and Receptacle Assembly

Insert Receptacle Assembly straightly to Header Assembly until click sound is heard.

Do not touch the lock lever when inserting.

3.8. Un-mating with Header Assembly and Receptacle Assembly

Un-mate connector after lock lever is depressed completely.

If un-mating connector without lock lever is depressed completely, there is possibility to damage assemblies, cable and PCB.

4. VISUAL AID

Figure 10 shows typical application of DYNAMIC PUSH-IN Connectors and calls out the conditions that production personnel should check to ensure a good installation. For dimensional inspection, refer to the details in the preceding pages of this specification.

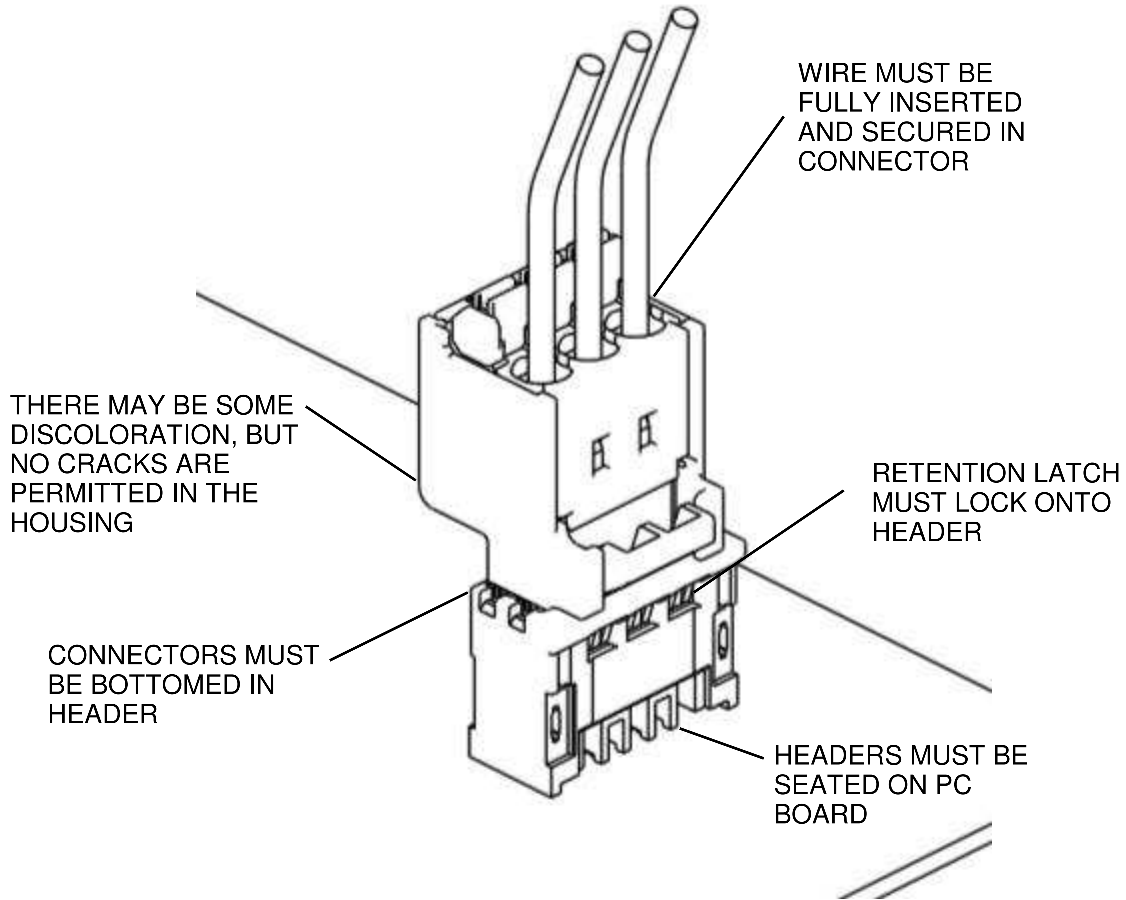

Figure 10