

### 1. INTRODUCTION

This specification covers the requirements for application of 2 pin wire to wire connectors (Plug & Receptacle) for use on lighting field.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

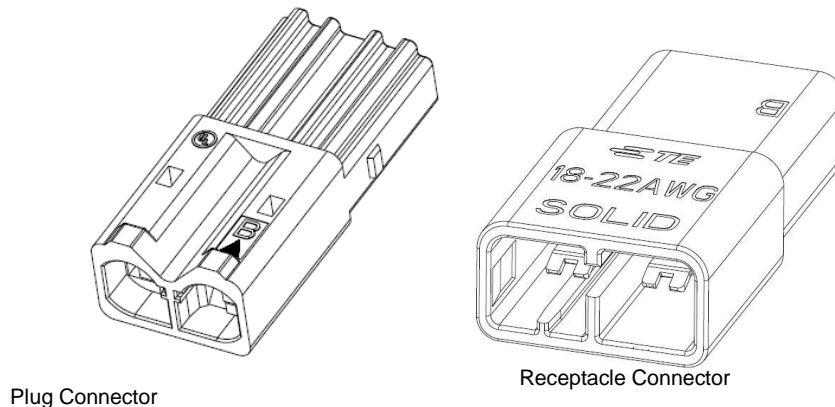


Figure 1

### 2. REFERENCE MATERIAL

#### 2.1. Revision Summary

Revision B – Update operation manual.

Revision C – Update operation manual.

Revision D – Assembly procedure notes update

#### 2.2. Customer Assistance

Reference Product Base Part Numbers 2271180/2271183/2271203 are representative of the wire-to-wire connector. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product information. Such information can be obtained through a local TE Connectivity Representative.

#### 2.3. Drawings

Customer Drawings for specific products are available from the responsible TE Connectivity Engineering department via the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any other technical documentation supplied by TE Connectivity.

### 3. REQUIREMENTS

#### 3.1. Safety:

**DO NOT** stack product shipping containers so high that the containers buckle or deform.

#### 3.2. Limitations:

The connectors are designed to operate in a temperature range of  $-40^{\circ}\text{C}$  to  $105^{\circ}\text{C}$

#### 3.3. Material

Contact is made of copper alloy; Housing is made from UL 94V-0 rated thermal plastic.

## NOTE

### 3.4. Storage



#### A. Ultraviolet Light

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

#### B. Shelf Life

The contacts and connectors should remain in the shipping containers until ready for use to prevent deformation to components. The components should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

#### C. Chemical Exposure

**DO NOT** store the contacts or connectors near any chemical listed below as they may cause stress corrosion cracking in the components.

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

### 3.5. Wire Selection and Preparation

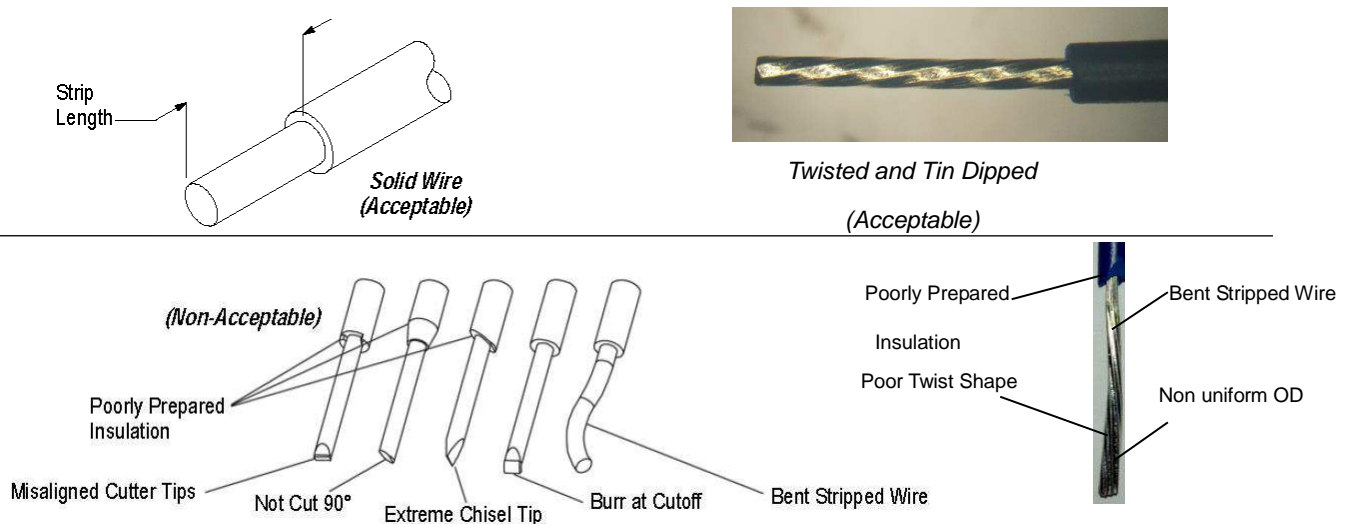
These connectors are designed for copper-to-copper connection only, **DO NOT** use on Aluminum. The applicable wire size and type are list in table 1.

**Table 1 Applicable Wire Size and Type**

Wire Type	Wire Size
Solid	18-22 AWG
Tin Dipped	18-22 AWG (16 strands or less for 18AWG; 7 strands or less for 20-22 AWG)

When preparing stranded wire, it is recommended to twist strands after stripping the insulation. The strands need to be well organized and in a uniform straight style. The stranded wire needs to be coated with Tin. Too much Tin coated is not allowed. Tin dipping depth is same as wire strip length. The maximum applicable diameter after tin dipping is 1.30mm.

The wire strip length is 9.0-9.6mm for the poke-in slot with an insulation diameter of  $\leq 2.8$ mm. The typical unacceptable wire preparation example is shown on Figure 2. For more pictures, please see appendix I.



**Figure 2**

### 3.6 Assembly Procedure



*In the field, these kits must be assembled by a qualified electrician in accordance with national and local electrical codes and the following instructions.*

*Turn off power before removing or installing connector.*

1. Select the proper assembly for your production requirements.
2. If using customer-assembled connectors, strip two wires with applicable copper conductors provided in Figure 2, and having a maximum insulation diameter of 2.8 mm.
3. Insert each stripped wire into a poke-in slot in the back of the plug or receptacle until bottomed. During the insertion process, make the tip of wire touch on the lead in feature and insert the wire with an angle as shown on Figure 3. The maximum allowed insertion angle in vertical direction is 10° (Figure 4).

#### NOTE



For field wiring, black wires must be inserted into corresponding slot marked “B”, and the white wires

#### NOTE

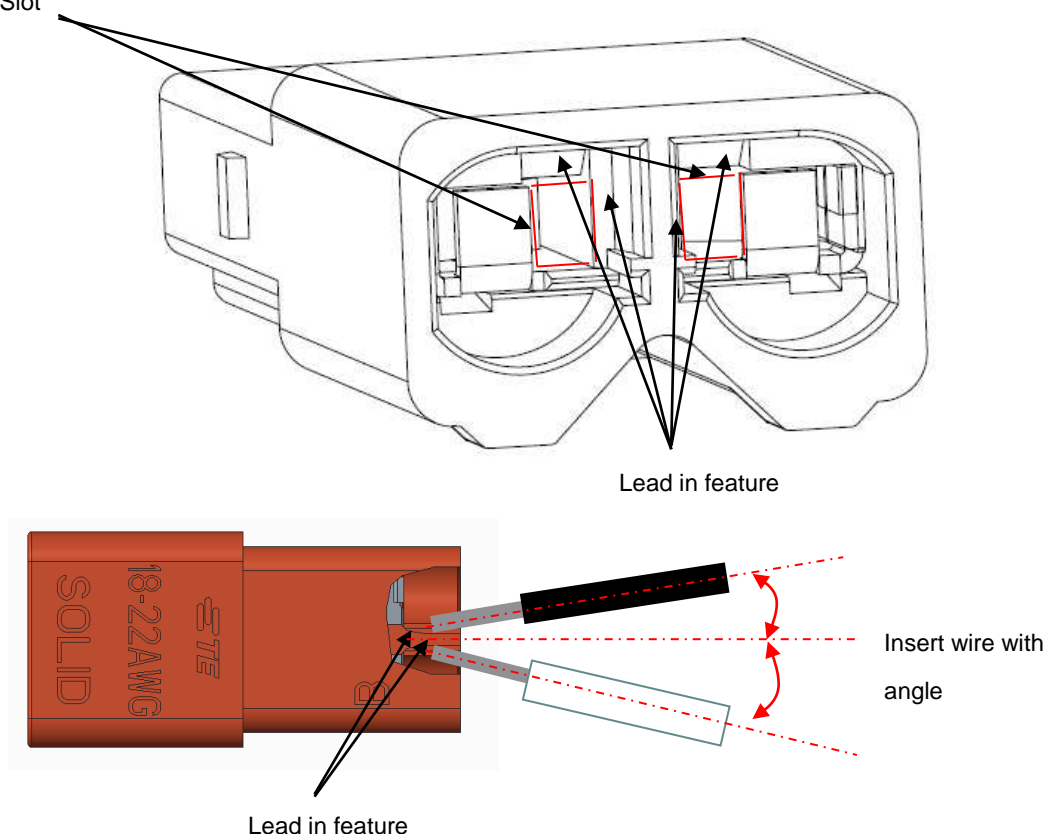


inserted into the other slot. The “B” (Black) wire insertion slot is also indicated by a triangle mark on the side of the housing. See Figure 1.

*Pull back gently on the wires to ensure they have latched fully in the housings.*

*The wire retention side of the connector is for **ONE TIME USE ONLY, DO NOT REMOVE AND REPLACE WIRES.***

Poke-in Slot



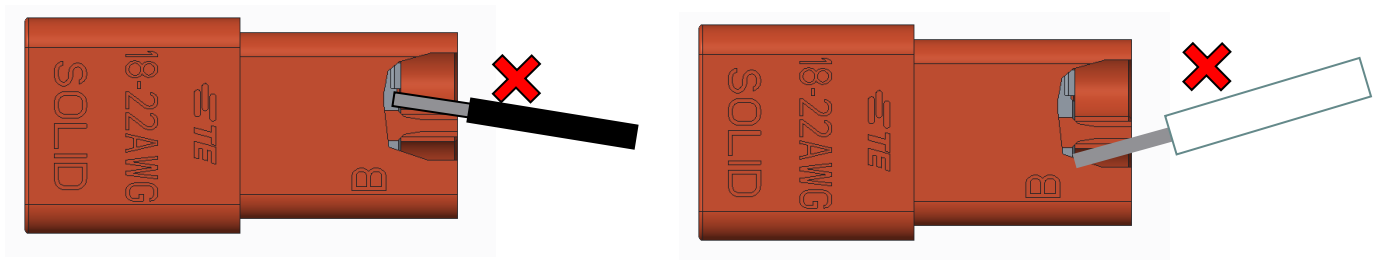


Figure 3

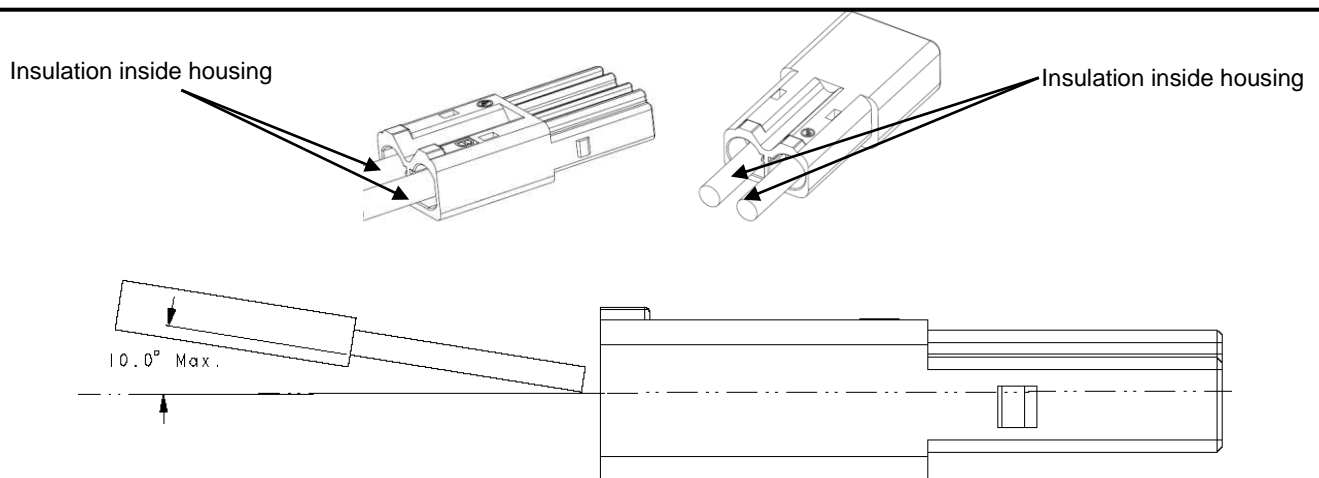


Figure 4

4. Make sure the insulator is in position (touch on the contact area). See Figure 5.

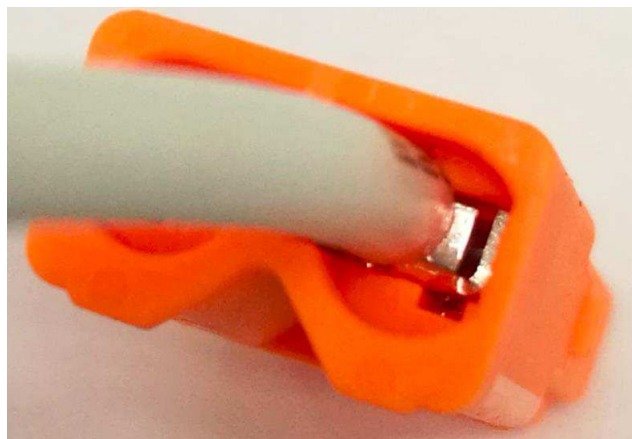


Figure 5

5. Apply optional approved flammability rated tape or clamp to organize the wire. See Figure 6.

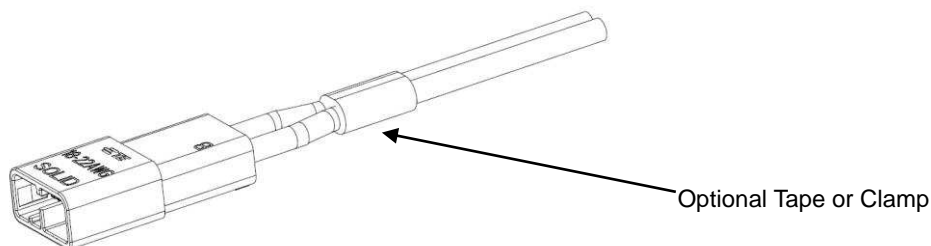


Figure 6

### 3.5. Connector Mating

Align the polarized mating faces of the housings and grasp the housings and push to mate with each other. **DO NOT** force the housings to mate. When fully mated, the housings must appear bottomed with each other and flush at the point of engagement. See Figure 7.

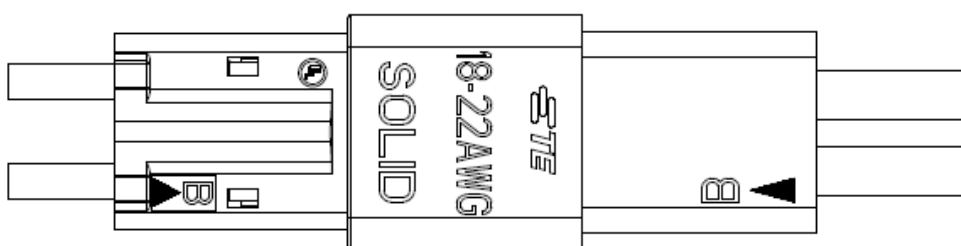


Figure 7 Mated Status

### 3.6. Connector Unmating

To reduce risk of electrical shock, **DISCONNECT** the electrical supply before unmating the connectors.

To unmate the connectors, grasp the connector at each end and pull apart the mated connectors.

**DO NOT** pull on the wires when unmating the connectors.

### 3.7. Replacement/Repair

In case to reuse the wires, use a slim pin to deform the contact locking tab, and then push out the contact, then the wires can be easily taken out. (Figure 8)

The contacts and housings are not repairable. **DO NOT** use damaged or defective contacts or housings. **DO NOT** remove the wire and re-terminate contacts.

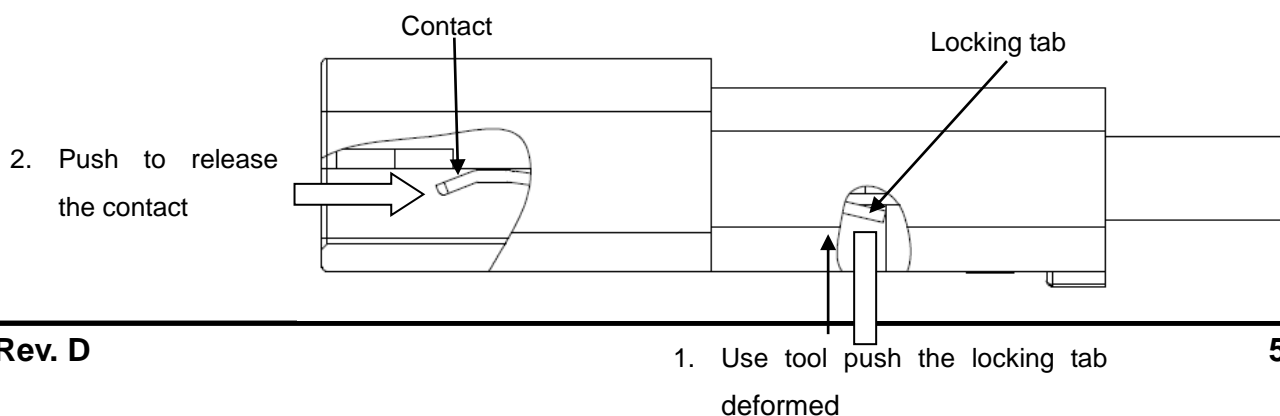


Figure 8

#### 4. QUALIFICATION

Connectors are Component Recognized by Underwriters Laboratories, Inc.

Multi-pole Splicing Wire Connectors: ZMNA.E308110

Multi-pole Splicing Wire Connectors Certified for Canada: ZMNA7.E308110

#### 5. TOOLING

Only a wire stripper is needed for the installation of the connectors if using customer-assembled connectors. No special tooling is required.

#### 6. VISUAL AID

The illustration below (Figure 9) shows a typical application of 2 Pin Wire to Wire Connectors. This illustration should be used by production personnel to ensure a correctly applied product. Applications, which **DO NOT** appear correct, should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product.

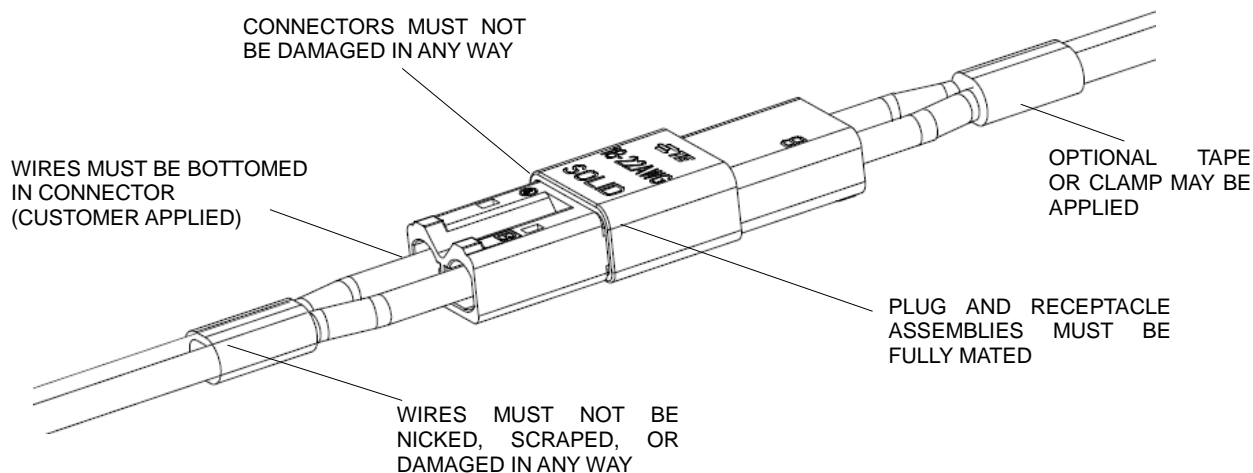


Figure 9. VISUAL AID

#### Appendix I: Typical unacceptable wire preparation example



