

Three-Way Tap and Splice Terminal System

Applications:

Pre-assembled connectors designed to tap and splice wires of dissimilar size into a circuit

Customer Concern:

A manufacturer of outdoor solar energy generation systems required a highly reliable method of splicing two 10 AWG wires and tapping in one 14 AWG wire. In addition to the reliability specifications, speed to market was a very high priority for this high volume application. The reliability of the wire connections was essential because the assembly would be over-molded to protect it from corrosive environmental elements. The over-molding process required consistent tolerances be held on form, fit and function of the complete assembly.

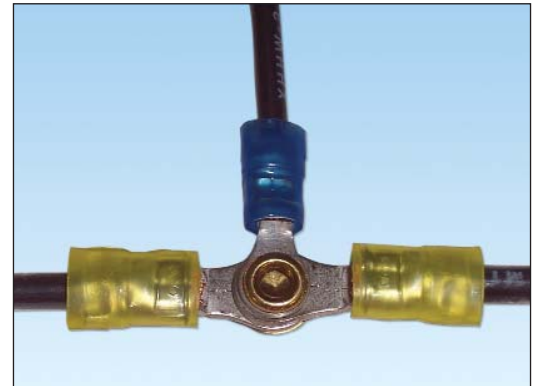
PANDUIT Solution:

Three-Way Tap and Splice Terminal System

PANDUIT proposed a number of designs, but the customer preferred the simplicity and reliability of the riveted ring terminal system. The customer also preferred this solution because the system consisted of standard terminals, which could be quickly assembled to meet the large initial volumes. This design does not require new high precision stamping tools to manufacture the terminals. Instead, existing ring terminals were assembled with a high strength rivet that locks them into place at fixed angles from each other.

Application Considerations:

The use of automated assembly equipment is precluded because of the configuration design; therefore, the crimping processes are manual. High volume customers need to be aware of this and plan resources accordingly. Customers also need to consider that the one tap has a lower current capacity than the feed-through terminals.



PANDUIT assembled three-way tap and splice system

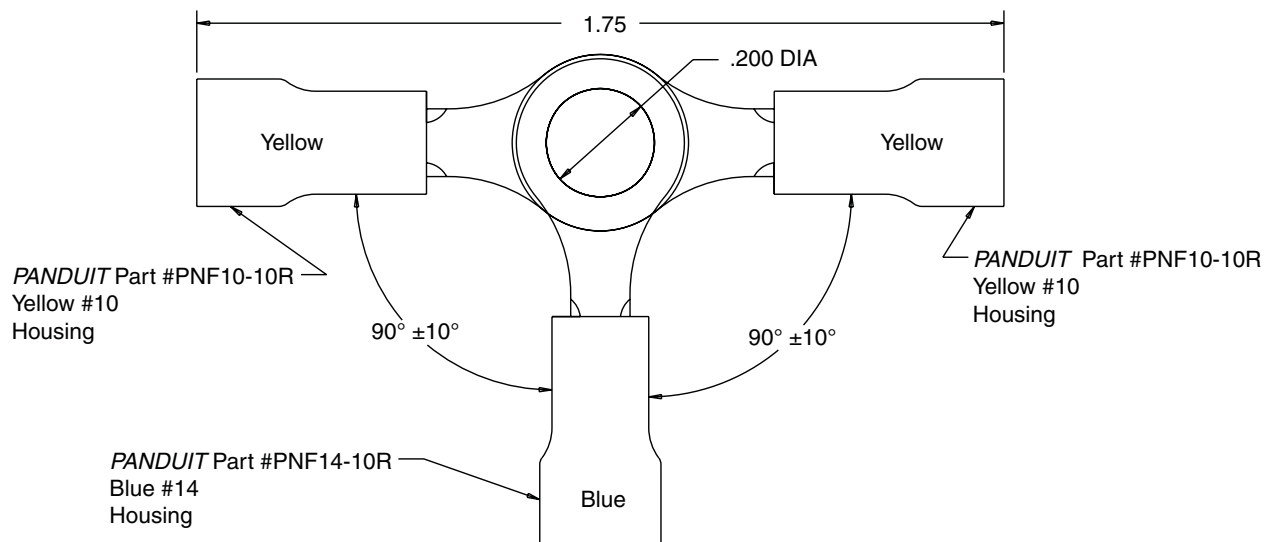


Solar panels are engineered for efficient, long-term performance



PANDUIT termination products are designed to withstand harsh environmental conditions

Three-Way Tap and Splice Terminal System



Notes:

- Material:
 - Ring Terminals – .04" thick each, 3 per assembly, copper, tin-plated
 - Housing – Nylon, yellow/blue
 - Sleeve – Brass, tin-plated
 - Rivet – Brass or Steel
- Part Number: TSN210114-10R-M
- PANDUIT three ring terminals identified above are to be riveted together using rivets with the yellow terminals in line with each other and the blue terminals 90° from the two yellow terminals. The blue terminal is mounted on top. The three terminals are to be held tightly together for maximum conductivity.
- The head of the rivet shall not exceed a height of .07" after crimping

PANDUIT part numbers shown on this drawing meet the material requirements of RoHS (European Directives 2002/95/EC) as proposed by the Technical Adaptation Committee

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