

# PIC Wire & Cable

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## Termination Instructions

T-110904

Approved :

Date : 09/18/15

Rev. 1 (06/30/16)

Distribution : USER

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### Termination Instructions for PIC P/N 110904, RJ45 90° Cat 6a Shielded Plug (568B configuration Only)

(for E6A3826 & E6A6826 Ethernet Cables)

Required Tooling :	X-acto Knife, Sharp Razor, Wire Cutters PIC 110701 Soft Jaw Clamping Pliers (Note : Similar Pliers are acceptable) Heat Gun, Small Screwdriver	→	
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Dimensions in Inches (NOT to Scale)

- 1) Install ATUM 16/4 × 1.5" dual wall shrink tube, collet nut w/ plastic collet, ATUM 12/3 × 1.0" dual wall shrink tube, and RJ45 90° rear body on to the cable, in the sequence and orientation shown (Fig. 1).
- 2) Make Cut A @ 1.25" from end of cable, scoring the jacket. Do not nick or cut into braids. Remove jacket at Cut A (Fig. 2).
- 3) Partially comb out wire braids, and fold braids back over, to lay flat on cable jacket (Fig. 3). Trim off foil (if applicable) and teflon tape interlayer at Cut A (Fig. 3). Do not nick or cut into insulation. Inspect to verify insulation integrity on all wires.
- 4) Fold out the wire pairs, and trim off cable spline between pairs, as short as possible (Fig. 4a). Do Not nick or cut into wire insulation. Inspect to verify insulation integrity on wires. Trim wire ends squarely (.050" nom) w/ razor to facilitate pair untwisting, and entry into wire carrier (Fig. 4b). Separate and straighten pairs for installation into the wire carrier, while maintaining pair twist for approximately .250" from end of wire braids (Fig. 5). Straightened sections of wires must be fairly straight to facilitate fitting through the wire carrier holes.
- 5) Fit the pairs into the wire carrier per the color code on the load bar (Fig. 5). Install the wires as shown, maintaining .425" distance between wire carrier and folded wire braids (Fig. 5).
- 6) Adjust the soft jaw clamping pliers height to crimp squarely on the wire carriers (Fig. 6). Keeping wire pairs firmly in the wire carrier, crimp the wire carriers onto the circuit board until seated flat on the circuit board (Fig. 6).
- 7) Trim off wire ends flush with the end of the wire carrier (Fig. 7). Remove the black protective cover from the circuit board (Fig. 8).
- 8) Install the circuit board / wire carriers / cable into the RJ45 connector body, until fully seated (Figs. 9a & 9b). The wire carrier is keyed to align correctly into the connector body. A small flat blade screwdriver can be used to fully seat the circuit board / wire carriers, using caution to not bear upon or damage wire insulation (Fig. 9a). Verify full insertion of *wire carrier* (not circuit board) @ .135" Min depth from the connector shell outer edge (Fig 9b).

Figure 1

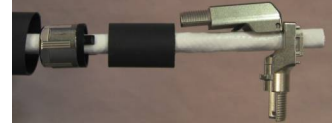


Figure 2

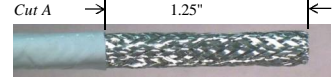


Figure 3

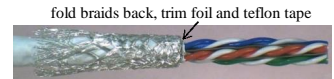


Figure 4a

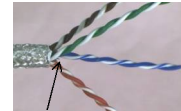


Figure 4b

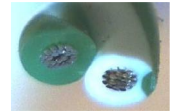


Figure 5

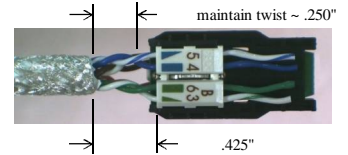


Figure 6



Figure 7

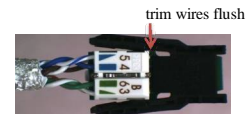


Figure 8

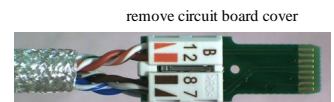


Figure 9a

insert circuit board / load bar / wires fully

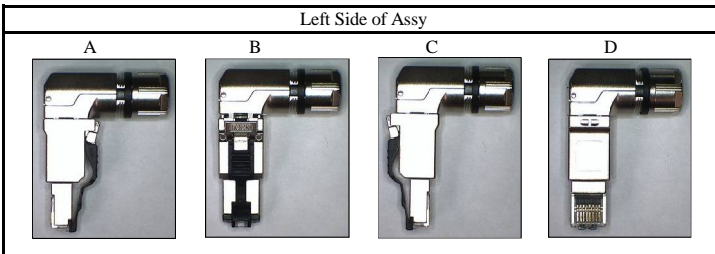
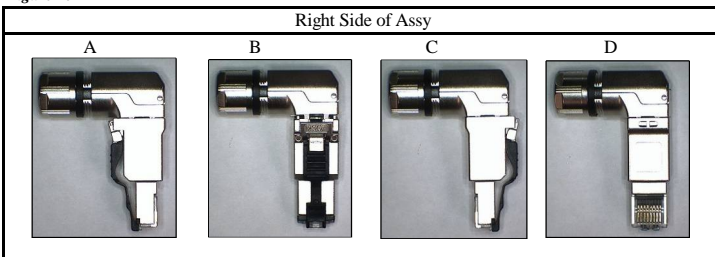


Figure 9b

.135" Min depth



Figure 10



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- 9) With the circuit board / wire carriers / cable fully seated into the RJ45 connector body, select the Connector Orientation per dwg. or installation (reference Fig. 10), and install the rear body (Fig. 11a) until flush with front body (detents snap in). Using the 110700 parallel-jaw pliers, close the Locking latch tab (Fig. 11b) until it snaps shut. Lock should be flush with body (Figs. 11a & 11b).
- 10) Confirm correct connector orientation. If orientation needs to be changed, open the Lock latch using a small screwdriver (Fig. 12). Re-install rear body into the front body, in desired orientation, until flush with front body. Close the Locking latch tab (Fig. 11b) until it snaps shut. Lock should be flush with body (Figs. 11a & 11b).
- 11) With rear body locked in, push cable forward into connector, giving 1/8 to 1/4 twist, which provides some wire slack between cable exit and wire carrier entry. Route the cable to fit into the rear body cavity as shown (Fig. 13). Trim off excess wire braids evenly with the end of the rear body (Fig. 13); cable may need to be lifted out of cavity to access all braids for trimming.
- 12) Verify trimmed fit, lift cable out of cavity enough to locate the ATUM 12/3 x 1.0" dual wall shrink tube over the braid ends. Fit the shrink tube over the braids, to align the start of the ATUM shrink with the external shoulder on the rear body as shown (Fig. 14). Shrink the tubing in location shown, use caution to avoid excessive heat affecting plastic connector components (Fig. 14).
- 13) Check for stray braids, remove as needed. Close the rear body halves together (Fig. 15), install the collett & collett nut onto the rear body, with collett guide located in the slot between rear body shell halves (Fig. 15). Tighten the collett nut until snug enough to firmly secure the cable (Fig. 16).
- 14) Locate the ATUM 16/4 dual wall shrink tube up to the inside corner of the connector and shrink onto the cable & connector as shown (Fig. 17). Remove the RJ45 Plug cover as needed (reference Fig. 17) to test or install the cable assembly.

Figure 11a  
Install rear body

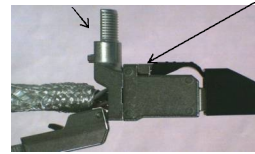


Figure 11b  
Close Locking latch



Figure 12 To change orientation, open Locking latch

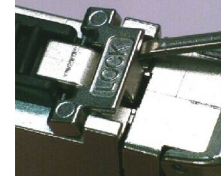


Figure 13 Trim braids even w/ rear body end



Figure 14 Start shrink even w/ external shoulder



Figure 15 Collett guide located in slot

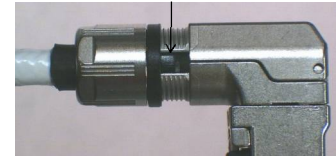
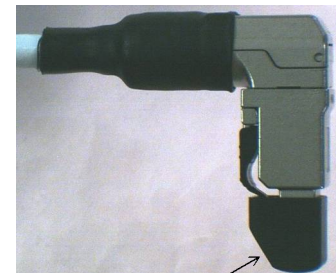


Figure 16 Tighten collett nut



Figure 17 Shrink ATUM 16/4 over connector & cable



Remove RJ45 cover

Note: Connector Length added to cable = -.930" nominal