Super-8-CCA Fatwire™ Installation Manual

PerihelionDesign.com

Specifications:

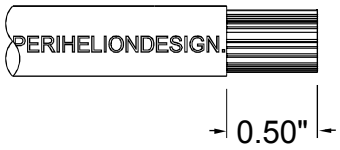
Resistance—0.641 milliohms/foot
Insulated Weight—0.78 ounces/foot
Diameter—Approximately 0.27”
Ampacity—minimum 60A continuous.
It is constructed of 56 strands of AWG 23 CCA wire.
The insulation is >300C ETFE.

Super-8-CCA (Copper Clad Aluminum) is a custom-made wire specially designed for experimental aircraft battery-starter wire and ground conductor bus applications. Nominally it has the characteristics of AWG 8 copper wire, but is much lighter in weight.

Installation Instructions:

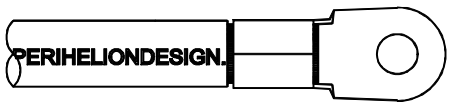
It is suggested that the following procedure be used to make a good termination for the wire, using Tyco AMP No. 33465 (1/4” hole) crimp lugs. Alternatively there are many wire connectors available at your local electrical contractor’s supply house that you may wish to explore.

Remove 1/2” of the insulation from the end. Make sure you do not nick the metal strands.



Crimping the Lugs:

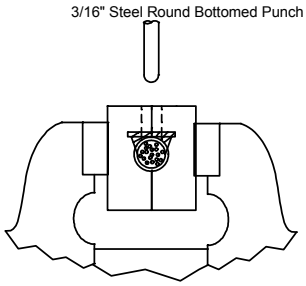
Check to make sure the lugs slide onto the bare wire end.



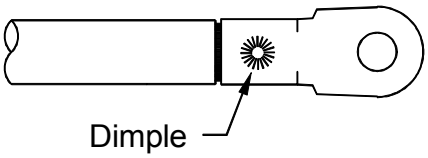
If you do not have a suitable tool for crimping the lug onto the wire end, (the professional tools are usually very expensive) you can make a handy jig to do this—

Take two pieces of metal. Clamp them together and drill a 17/32” diameter hole through the block, and a 3/16” clearance hole perpendicular to the first hole to accept a 3/16” steel punch with a rounded face ground onto the end.

Clamp the wire and the lug into the jig in the jaws of a sturdy vice, leaving a 1/8” gap between the insulation and the lug. Hammer the punch firmly until the wire shows no movement in the lug.

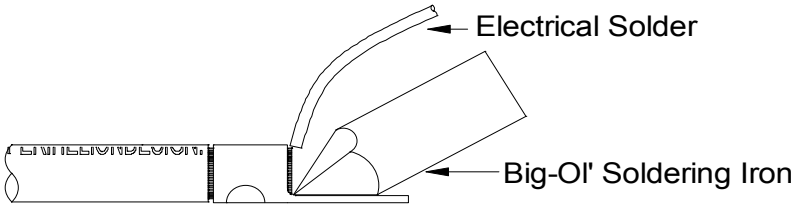


The crimped lug should look more or less like this:



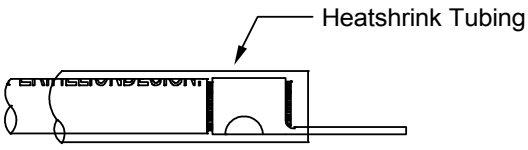
Soldering the lugs---

Fixture the crimped connectors to a piece of wood using a wood screw or drywall screw, with the flat side of the lug down. Now drag out that big old 100W soldering iron (everyone has one—or you can use the soldering tip for your propane torch—but NOT the flame), wire brush the crud off the end, crank it up and heat the lug and copper clad aluminum conductor. Using heavy-gauge rosin core electrical solder, fill the interstices with solder until the solder comes out the back end (you should see it in the little 1/8” gap). With reasonable care the wire insulation will not be damaged.



Rinse off the rosin flux with some tri-chlor or MEK. We suggest some type of electrical coating be used to seal the small 1/8” gap and the exposed face of the wire to make a neat job. Epoxy or silicone would do. Fingernail polish would be great.

Slip on heat shrink tubes as desired. Shrink the heatshrink tubing.



Eric M. Jones
23MAR2013