

Ferrite Installation Instructions

In all applications with the BLuAC5 series servo drives a ferrite should be installed on the three motor power leads (A, B, C). This is done by wrapping the three motor power leads around the ferrite core a few times. NOTE: The motor ground/shield lead must not be wrapped around the ferrite. The use of the recommended ferrite will greatly reduce electro-magnetic interference (EMI) that can be radiated from the motor power leads, and is necessary for a BLuAC5-based servo system to meet CE EMI requirements. "FA" motor cables provided by Applied Motion Products have these ferrites already installed, so in applications where an "FA" motor power cable is not being used these instructions should be followed. The step-by-step instructions below are for 4' cables. See the notes section at the end of this app note for details on 10' and 20' cables.

Ferrites

The recommended ferrite is made by Magnetics, Inc., and the part number is ZJ-42507-TC. Visit the Magnetics, Inc. web site - <http://www.mag-inc.com> - to purchase this part number.

STEP 1

Layout cable as shown, mark a measurement on the cable jacket 8" from the end of the wires at the end of the cable where it will connect to the BLuAC5 drive.



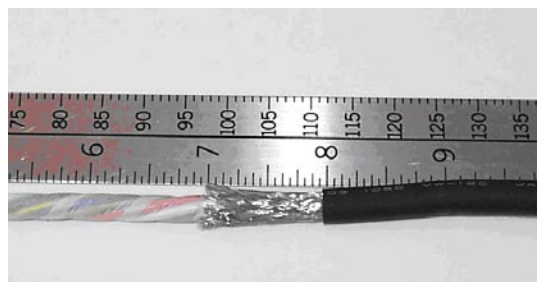
STEP 2

Strip back the cable jacket. Avoid nicking the braided shield underneath.



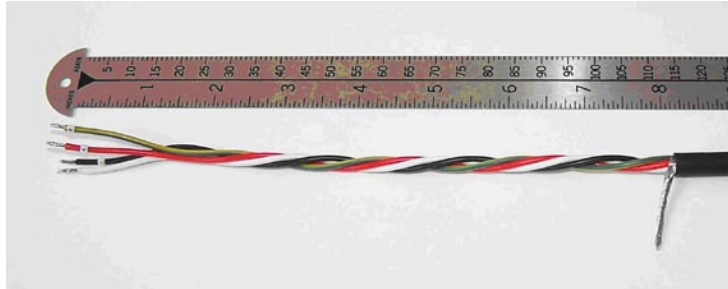
STEP 3

Cut back the braided shield leaving 1" from end of cable jacket.

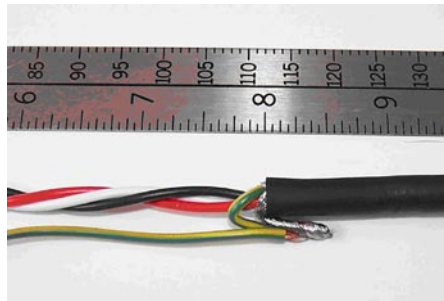


STEP 4

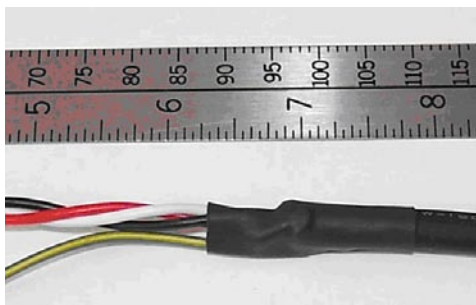
Unweave the braided shield and twist the braid wires over to one side of the cable. On non-FA cables from Applied Motion for motors without integral holding brakes, cut and remove the BLUE and YELLOW wires. Cut any core strings in the cable.

**STEP 5**

Cut the ground/shield wire (in Applied Motion cables this is the GREEN/YELLOW lead) 1" from the end of the cable jacket. Save the cut piece of ground wire. Strip 3/8" of insulation from the 1" ground wire on the cable and the remaining cut piece of ground wire. Twist the two ground wires (1" end and cut piece) and the braid wire together and solder. Fold the bundle back against the cable jacket.

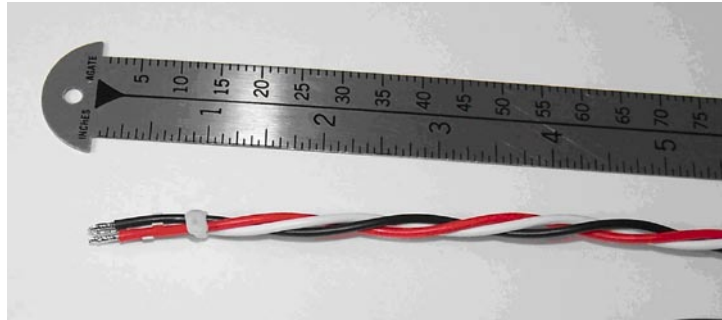
**STEP 6**

Install a 1.5" long piece of 3/8" heat shrink tubing over the wire bundle and cable so that 1" of heat shrink tubing is over the cable jacket. Heat shrink in place.

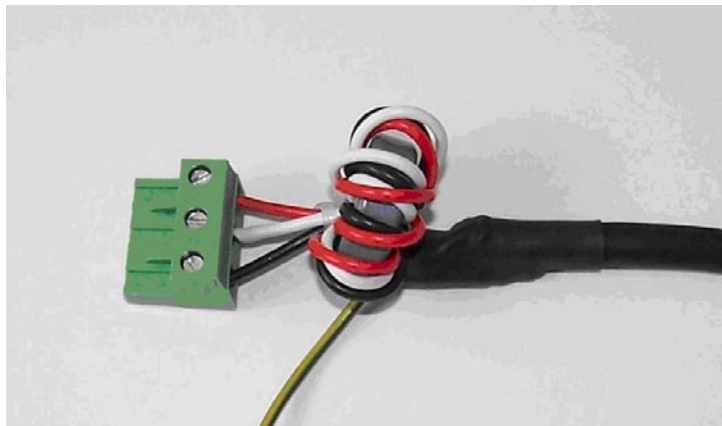


STEP 7

Twist the motor power leads (in Applied Motion cables these are the RED, WHITE and BLACK leads) together and install a cable tie 1" from the end.

**STEP 8**

Wrap the motor power lead bundle 5 times around the ferrite core by first bringing the bundle through the center of the ferrite, then back around the outer diameter of the ferrite, then through the center of the core again, and so on. Connect the motor power leads to the BLuAC5 motor power screw terminal plug. Connect the ground lead to the ground screw located on the BLuAC5's aluminum mounting bracket.

**Notes on 10' and 20' cables**

4' cables require one ferrite core, whereas 10' cables require two and 20' cables require three. The basic procedure outlined above applies to 10' and 20' cables, but with the following minor adjustments.

- In STEP 1 cut back the cable jacket 12 inches for 10' cables and 16 inches for 20' cables.
- In STEP 8 stack the ferrite cores together (two cores for 10' cables, three cores for 20' cables) before wrapping the motor power leads. Treating the multiple cores as one core, wrap all three motors leads by first sending them through the center of the cores, back around the outside of the cores, then through the center again, and so on. The total number of turns for the 10' and 20' cables is 5, the same as with the 4' cables.