

## PA21 Cable Installation Instructions

**NOTICE:** For proper operation of the ATI High Current module, customer supplied cables must be high-flex with fine stranding, with suitable strain relief for proper motion of the cable.

**Tools required:** 2.5 mm and 4 mm Allen wrenches (hex key), 13 mm socket wrench, torque wrench.

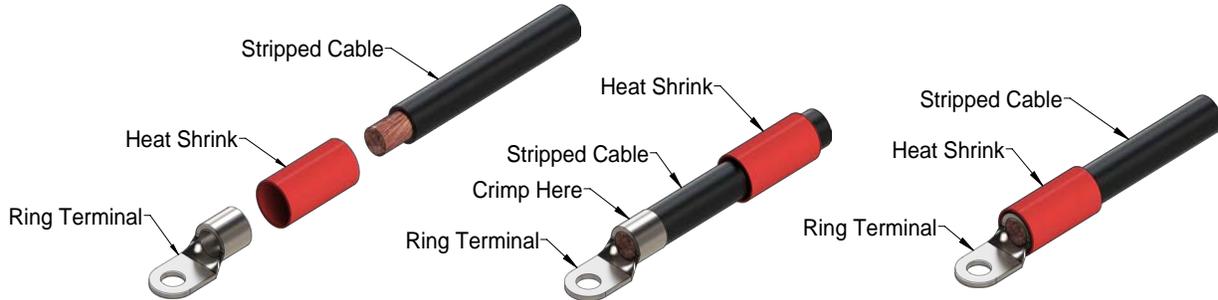
1. Insure that the housing end plate and fitting plate have their (4) M5 socket head cap screws tightened to 25 in-lb (2.8 Nm).
2. Using a 2.5 mm Allen wrench, remove the (4) M5 socket flat head cap screws that secure the cover plate assembly to the housing and remove the cover.
3. Using a 13 mm socket wrench, remove the (3) M8 hex head cap screws and (3) M8 external tooth washers that secure the ring terminals to the (3) contact bases.
4. Remove the (6) ring terminals that will be used to attach the customer-supplied high-flex type cables. Note: (3) ring terminals are provided for 25 mm<sup>2</sup> cable and (3) for 35 mm<sup>2</sup> cable. Use the size which best fits the cable.
5. Cable Installation:
  - a. Select the proper size ring terminals (supplied by ATI) for the customer-supplied cable. Note: Where multiple ring terminal sizes are supplied, select the one which best fits the cable.
  - b. Refer to the customer supplied crimping tool manufacturer's instructions and select the proper size hex dies for the ring terminal and cable.
  - c. Refer to the wire manufacturer's instruction manual for specific wire preparation and crimping instructions.
  - d. Prepare the high-flex type cable ends by stripping the insulation back to the approximate length of the crimp of the ring terminal, about 0.5" (12.7 mm). Avoid cutting wire strands while stripping the cable insulation.

**Figure 1.1—Wire Stripping**



- e. Cut a piece of heat shrink long enough to cover the crimp on the ring terminal and a portion of the cable insulation. Refer to [Figure 1.2](#).
- f. Slide the piece of heat shrink onto the cable; position the heat shrink behind the stripped end of the cable.
- g. Slide the ring terminal over the stripped end of the cable. Ensure there are no wire strands protruding from ring terminal.
- h. Following the manufacturer's instructions for the customer-supplied crimp tool, crimp the ring terminal onto the cable.
- i. If the ring terminal tongue distorts during crimping, flatten and straighten the tongue such that its flat portion is parallel to the cable's center axis.
- j. Slide the piece of heat shrink tubing over the ring terminal barrel, making sure it completely covers the ring terminal barrel and crimp. Shrink in place using a heat gun.

**Figure 1.2 —Connecting the Ring Terminal**



6. Using a 30 mm crows foot wrench, loosen the cord grips and route the cable through the cord grips and fitting plate.
7. Install and secure the (3) ring terminals to the contact bases using the (3) M8 external tooth washers and (3) M8 hex head cap screws (see [Figure 1.3—Installing the Cables](#) for ring terminal orientation). Tighten the screws finger-tight.
8. Using a 13 mm socket wrench, tighten the (3) M8 hex head cap screws to 90 in-lbs (10 Nm).
9. Beginning with the middle cord grip, tighten the cord grip dome nuts to 60 in-lb (6.8 Nm) using the 30 mm crows foot wrench (depending on specific customer cable, the torque value may need to be increased to prevent cable movement).
10. Apply Loctite 222 to the (4) M4 socket flat head cap screws and use the screws to install the cover plate assembly to the housing.
11. Using a 2.5 mm Allen wrench, tighten the (4) M4 socket flat head cap screws to 12 in-lb (1.4 Nm).
12. After cable installation, on the Tool side, push on each contact separately and release; the contact should spring back.

**Figure 1.3—Installing the Cables**

