

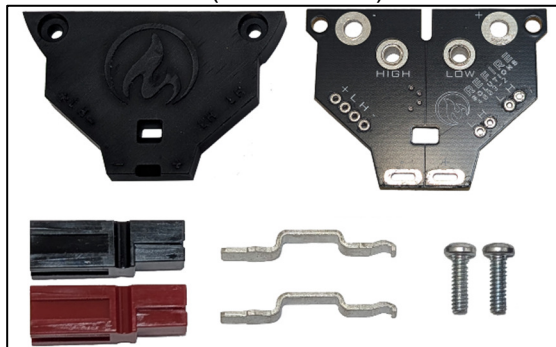


REFIRE SOLUTIONS

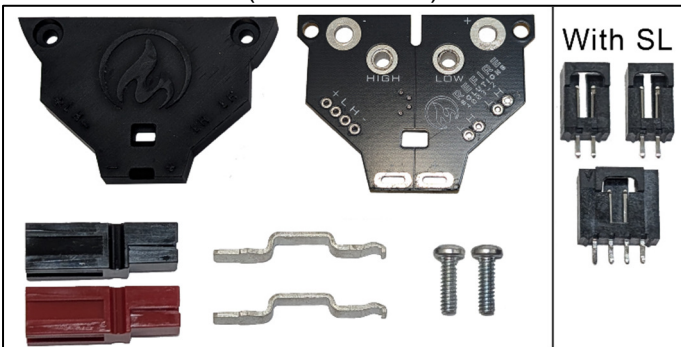
ReFire Quick Connect – Assembly Instructions

Package Contents:

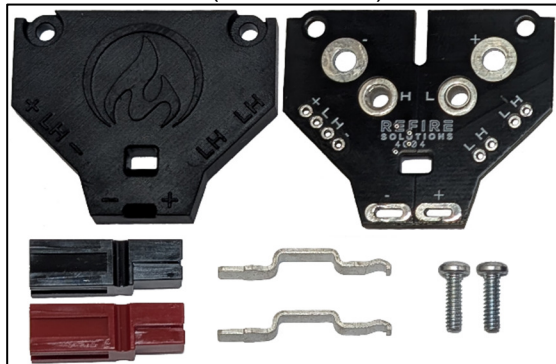
Anderson Only x60
(RF-4003-A)



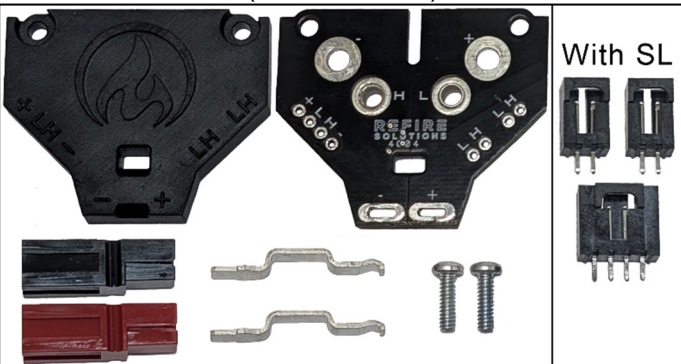
Anderson and Molex SL Connectors x60
(RF-4003-SL)



Anderson Only x44
(RF-4004-A)



Anderson and Molex SL Connectors x44
(RF-4004-SL)



Important Information:

- Instructions for RF-4003 and RF-4004.
- CAN wires creating a CAN branch via the sensor connector should be kept as short as possible.
- The voltage on the sensor connection is unregulated and will vary with motor load.
- Due to the direct solder connection to the PCB copper plane, a high power soldering iron and proficient soldering skills are required in order to properly assemble this adapter.
- It is important to make good solder joints when soldering this adapter. Poor solder joints can cause intermittent issues and product failure. Adafruit.com has a good reference for common problems with solder joints in their “Guide To Excellent Soldering” available here:
<https://learn.adafruit.com/adafruit-guide-excellent-soldering/common-problems>
- PCB and connectors will become hot when soldering.
- Always follow soldering safety standards and have the proper training before attempting to make any solder connections.

A Note On Connectors on CAN-FD Busses:

Molex SL connectors are a popular choice for CAN bus connections by FRC Teams. While very popular, we have had a couple of reports of CAN errors related to using these connectors on a robot's CAN-FD bus. One report was seemingly caused by using many connectors on a single FD bus. In addition, the connectors can be temperamental if not handled carefully (this is especially true for knockoff versions). We are not aware of any issues on non-FD CAN busses. Because of this, we recommend only using branded Molex SL parts, keeping the total number of Molex SL connections under 25 on a single bus, and soldering wire directly to our Quick Connect boards where convenient (and then utilizing a different connector inline if desired). One connector that has had good initial testing results as an alternative are Molex Mini-Fit Jr. connectors.

Molex SL™ Mating Connector Parts:

- CAN Mating Connectors Molex Part: 50579402
- Sensor Mating Connector Molex Part: 50579404
- CAN and Sensor Contacts Molex Part: 16020102
- Crimp Tool Molex Part: 638118700

Assembly Instructions

Step 1:

Assemble and solder the Anderson Powerpole to the PCB making sure to match the orientation and polarity marks on the PCB.



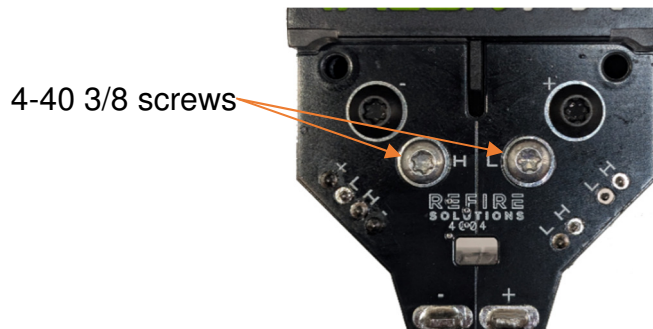
Step 2:

Solder the desired Molex SL connectors or wire leads (up to 20 AWG) to the CAN and sensor terminals. Check solder joints for proper solder fillet (especially on the negative connection of the sensor connector).



Step 3:

Attach the board to the motor using the two 4-40 3/8 screws provided on the CAN motor terminals and the two motor manufacture screws on the power connections. Instal all of the screws loosely before tightening. Follow the motor manufacturer specifications for the screw torque.



Step 4:

Use the two motor manufacture provided screws to attach the cover.