

Rationale for the Use of Anderson Powerpole Connectors

by GERC Radio Operators

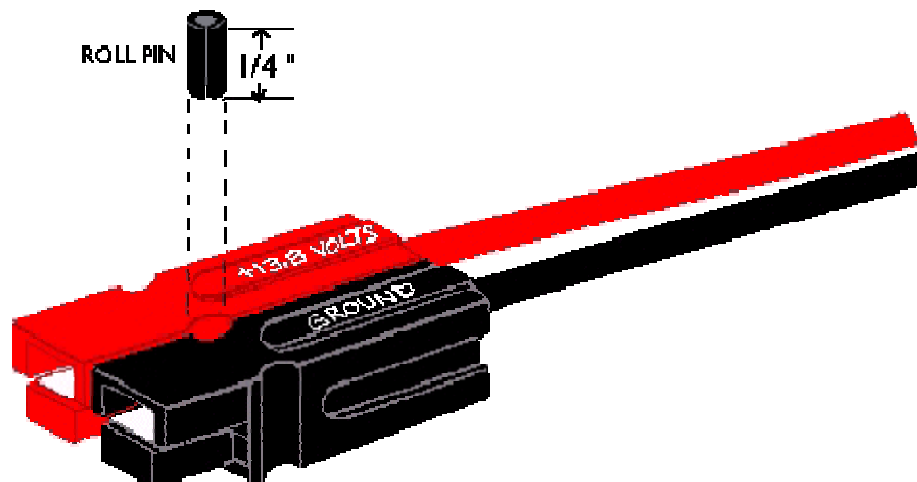
Article compiled by N7YLA

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For years hams have used "Molex" connectors as a standard to connect their radios and other equipment to power sources. The Molex connector had the drawback of being limited to about 10 amps, and were often used well beyond their ratings.

RACES and ARES organizations nationwide have now standardized on the Anderson Powerpole® for DC power connections to be used with emergency communications equipment. Refer to the Registry of Anderson Powerpole Users at <http://www.powerwerx.com/registry.asp>. The State of California OES Auxiliary Communications Service Southern Region prescribes the Anderson Powerpole as the standard dc power connector for use by State ACS/RACES personnel, and recommends its use by County and City RACES personnel as well. See <http://www.swtraffic.com/sca/>. Using this standard, highly reliable connector allows quick and easy installation and substitution of radios, power supplies, batteries, and other equipment.

Specifications: Either the 15-ampere or 30-ampere sizes may be used, and both sizes mate with each other. The plastic parts are the same for both sizes. The barrel area (which holds the wire) of the 15-ampere silver-plated contact is smaller than that of the 30-ampere contact, but the contact area is the same. The connectors dovetail together into a compact unit.



Housings should be mated according to the diagram above, viewing from the contact side (opposite the wire side), tongue down, hood up, RED on the LEFT, BLACK on the RIGHT. Use a 3/32-inch-diameter roll pin, 1/4 inch long, to keep the housings from sliding apart.

Highly conductive silver-plated copper contacts allow minimal contact resistance at high currents. Self-wiping action on make and break keeps conducting surfaces clean. Contact dents keep connectors mated in high-vibration applications and provide quick-break, snap action upon disconnect.

Noncorrosive stainless-steel leaf springs maintain constant contact pressure ideal for frequent connections/disconnections and intermittent overloading. Durable, high impact-resistant, polycarbonate housing with UL94V-2 flammability ratings comes in many colors for circuit traceability and coding.

Identical connector halves are genderless making assembly quick and easy and reducing the number of parts stocked. Molded-in dovetails allow for a customized harness in a variety of configurations. When the connectors are disconnected, no metal parts are exposed.

The 15-ampere contacts are designed for 16-20 AWG wire and the 30-ampere contacts are designed for 12-16 AWG wire. The contacts can be soldered or crimped to wires. An expensive crimping tool is available from Anderson. After a contact has been attached to a wire, it should be installed into the housing so that the housing spring mates with the underside of the contact.

To remove a contact from the housing, use Anderson insertion/extraction tool #111038G2. You may also substitute a very small blade (jeweler's screwdriver or X-acto knife) to depress the spring, allowing the contact to be removed.

Here are the Anderson part numbers:

| 15 A | Complete Connector | Housing Only | Contact Only |
|--------------|---------------------------|---------------------|---------------------|
| Black | #1395G1 | #1327G6 | #1332 |
| Red | #1395 | #1327 | #1332 |
| 30 A | Complete Connector | Housing Only | Contact Only |
| Black | #1330G4 | #1327G6 | #1331 |
| Red | #1330 | #1327 | #1331 |

The connectors can be panel mounted with clamp receptacles, consisting of two aluminum plates (Anderson part #1462G1), notched to hold the plastic housings when they are dovetailed together.

The plastic housings come in other colors also. Red and black are suggested for standard dc connectors (red as positive and black as negative).

Anderson Power Products Web Site: <http://www.andersonpower.com/>

Sources of Anderson Powerpoles:

Allied Electronics
Tel: 800-433-5700

Parts #803-0100, 803-0108, 803-0125, 803-0164
<http://www.allied.avnet.com/>

Cable X-Perts
416 Diens Drive, Wheeling, IL 60090
Tel: 800-828-3340 (orders only) or (847) 520-3003
Fax: (847) 520-3444
<http://www.cablexperts.com>
cxp@ix.netcom.com

D&L Antenna Supply Co.
3410 Gibbs Rd, Kansas City, KS 66106-3308
Tel: 800-965-8880 (orders only) or (913) 677-8674
Fax: 800-219-9392 (orders only) or (913)-677-2648
<http://www.wavehunter.com/>
dandl@birch.net

DC Power
2870 S.W. 199th Place, Aloha, Oregon 97006
Tel: (503) 649-3295
<http://www.dcpwr.com/>
wesa@dnc.net

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8431 Commonwealth, Buena Park, CA 90621-2594
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Fax: (714) 990-5532
<http://www.powerwerx.com/>
info@powerwerx.com

Reference:

Lewin, Arnie (2003) W7BIA, Southern Region ACS Officer, State of California OES, "Auxiliary Communications Service Southern Region Standard DC Power Connector"

