



Honda EU 3000 Generator

Housed in an enclosure inside the garage, vented to the outside with two 100+ cubit ft / minute AC muffin fans directly plugged into generator

enclosure is completely lined with cement board in case the generator would overheat

Copper Wire Specs (welding cables for flexibility)

American Wire Gauge / AMPS @ 75° C insulation

0000	230
000	200
00	175
0	150
1	130
2	115
3	100
4	85

System Requirements

3000 watts @12 Volts = 250 AMPS from bus bar to Inverter, use 4/0 welding wire w/ copper lugs

divide by 3 = 83.3 AMPS battery to bus bar current, use no. 2 welding wire w/ copper lugs



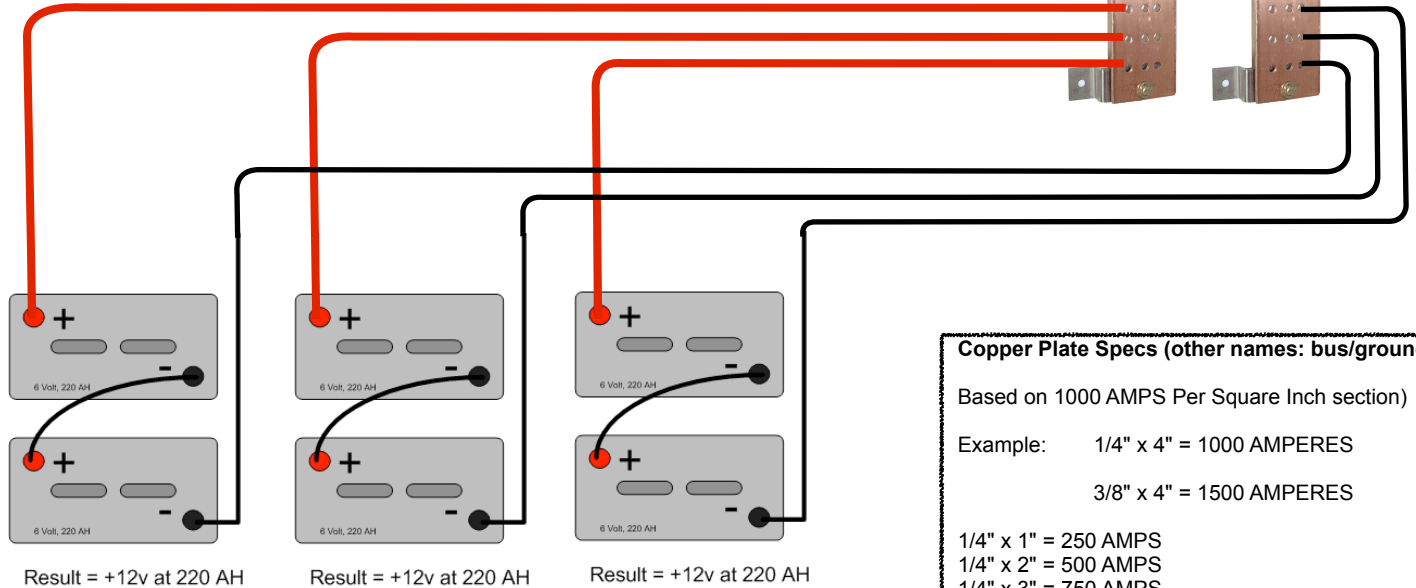
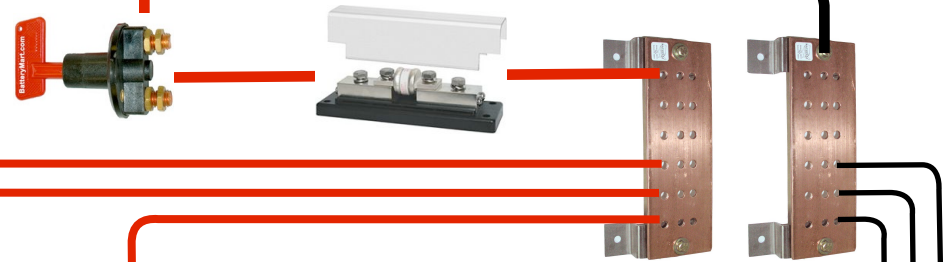
Xantrex MS3000 Inverter with optional Control panel
 linked via 70 feet of ethernet cat5e weatherproof shielded cable, buried between cabin and garage.
 Direct connect between panel and garage wall ethernet outlet, short cable from outlet to inverter.

Garage breaker and distribution panel



Battery Cut-Off Switch 500 Amps

Class T Fuse Block + Fuse 350 Amps



Result = +12v at 220 AH

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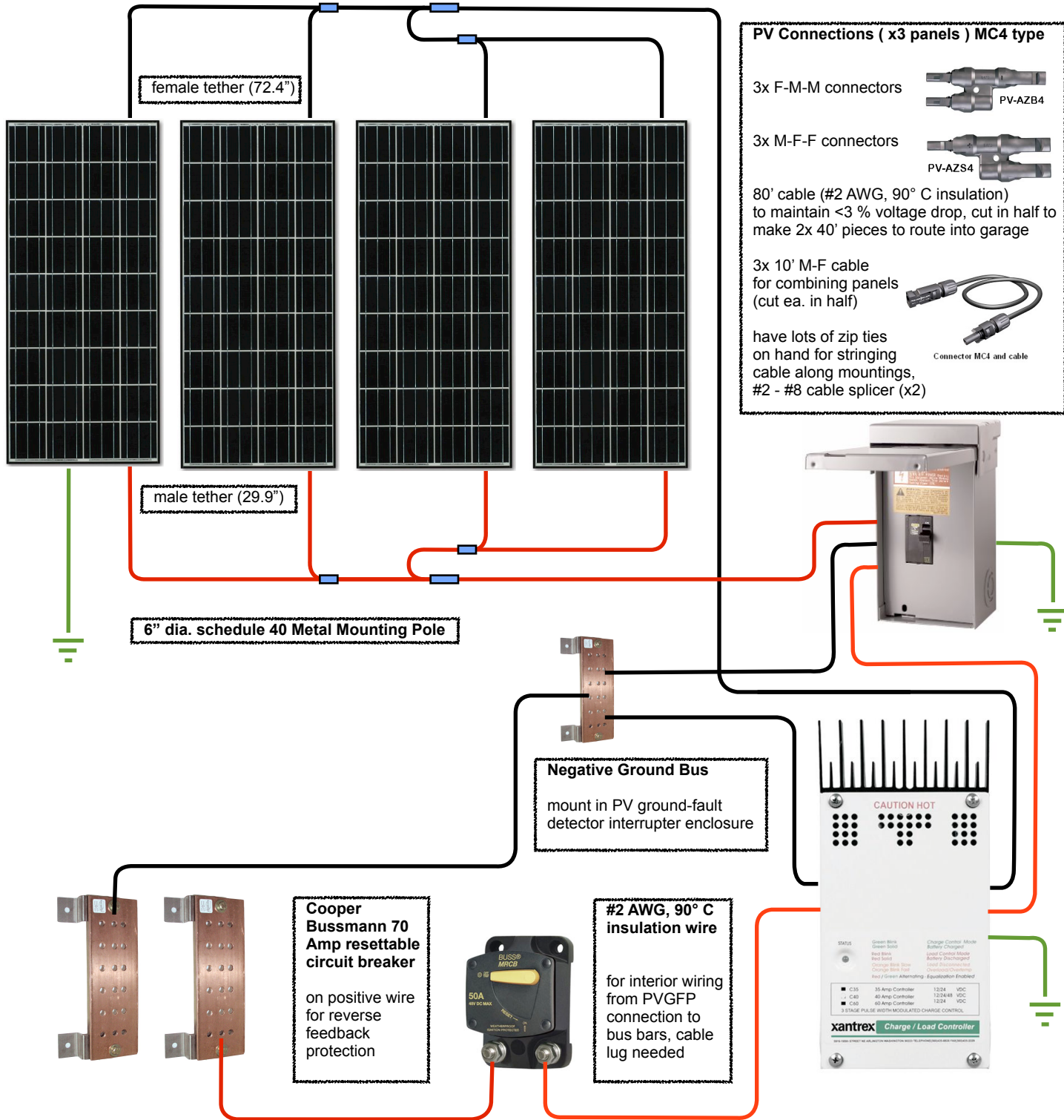
Copper Plate Specs (other names: bus/ground bar)

Based on 1000 AMPS Per Square Inch section)


Example: 1/4" x 4" = 1000 AMPERES


3/8" x 4" = 1500 AMPERES

- 1/4" x 1" = 250 AMPS
- 1/4" x 2" = 500 AMPS
- 1/4" x 3" = 750 AMPS
- 1/4" x 4" = 1000 AMPS




PV Connections (x3 panels) MC4 type

3x F-M-M connectors  PV-AZB4

3x M-F-F connectors  PV-AZS4

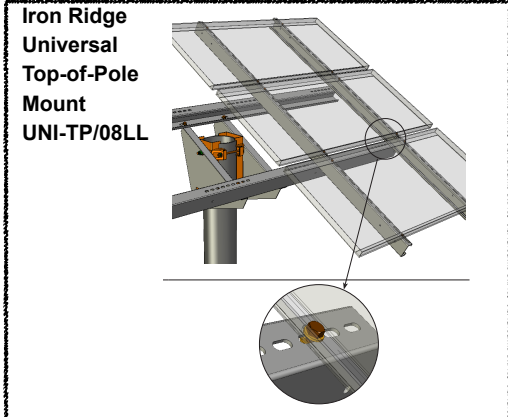
80' cable (#2 AWG, 90° C insulation) to maintain <3 % voltage drop, cut in half to make 2x 40' pieces to route into garage

3x 10' M-F cable for combining panels (cut ea. in half)  Connector MC4 and cable

have lots of zip ties on hand for stringing cable along mountings, #2 - #8 cable splicer (x2)

135 GX-LPU Kyocera 12 V Solar Panels
maximum power: 17.7 V & 7.63 Amps


72.4" - connect, 29.9" + connect (male)
dimensions: 59.1" x 26.3"
MC4 latching cables



Xantrex PV Fault Ground Protection Assembly (model no. PVGFP-CF-1)

Square D breaker box
flush mount breaker box to charge controller with side knock outs

follow Xantrex C60 charge controller installation instructions for wiring details



Xantrex C60 Solar Charger

Xantrex Battery Temperature Sensor 15 ft cable

Xantrex Integrated Faceplate DVM for C-Series



- Notes**
- current system uses 14 batteries
 - an Outback Power 80 Amp single pole PV ground-fault detector interrupter was used in place of the Xantrex GFP
 - all grounds go to a common bus bar which is attached to an 8 foot grounding rod



RAB R14-1B

one hole face plate for spot light over service door aimed at cabin + standard rectangular box



RAB R14-3B faceplate + B3B rectangular box

three hole face plate for sensor + spot lights, ~ \$5 ea



RAB R14-1B

one hole face plate for spot light by work bench + standard rectangular box

RAB Weatherproof MR16 fixture

die cast aluminum with powder finish, "O" ring sealed, brass and stainless steel hardware, 180° pivot, ~ \$45 ea

Light Switch

for single light fixture in front of workbench window + spotlight --- placement to be determined (suggest placing on right side of breaker box :: run wire to attic and back down wall)

Inline Maxi Fuse Holder

use with 5 amp 12 V rated automotive mini-fuses



RAB Stealth 12V motion sensor

programable for 5 seconds to 12 minutes time adjustment, 1 watt power consumption, 96 watts max output, ~ \$100



Brightest SMD MR16 330 lumen LED

pure white 4.6 watt, 45 degree spot illumination, -20°C to 120°C operating, ~ \$23



SPT-1 #18/105° wire

usually in 250 foot spools, ~ \$30

