Electrician Handoff Sheet

Homeowner: Address: Service size (A): Date:

Inverter: ☐ RUiXU SUNON12 ☐ Powland 12kW ☐ EG4 12000XP

Connection: ☐ A transfer switch ☐ B critical loads ☐ C meter collar

Who does what

Homeowner has done or will do

- Mount the inverter indoors with 19.7 in (50 cm) clear above, below and on each side
- Build the 32kWh battery in place and connect it with 2/0 AWG copper
- Run the PV strings to a PV disconnect and to the inverter
- Battery communication cable and battery menu settings

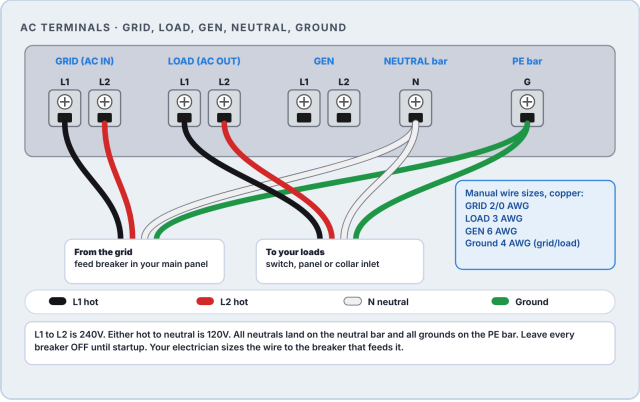
Electrician is asked to do

- Install the transfer switch (Option A), the critical loads panel and its feed (Option B), or the outlet for a utility-installed meter collar (Option C)
- Land GRID (AC IN) and LOAD (AC OUT) on the inverter, with ground
- Confirm neutral and ground bonding for the chosen layout
- Check the homeowner's DC and PV work before first startup

Inverter AC data (RUiXU SUNON12, 12kW all-in-one)

Output	120/240V split phase, 60Hz, pure sine. 12,000W continuous (50A per leg at 240V). 18,000VA peak. 6HP motor capacity.
Grid input	120/240V split phase, 85 to 140V per phase, 50/60Hz. Maximum input current 200A on L1 and L2. Bypass overload current: Load 125A, Smart Load 60A.
Built-in breakers	INV input 63A, Generator 63A, Load 125A, Smart Load 63A (all L1/L2). Battery 300A.
Transfer	Grid on GRID passes through to LOAD. On grid loss the inverter supplies LOAD from the battery. Typical switch time 10 ms.
Charging from AC	Up to 160A into the 48V battery from grid or generator (Max AC Charge Current, default 120A; Gen Charge Current, default 60A).
Generator input	Separate GEN L1/L2 terminals, 120/240V, 60A overload current. N-NO-NC dry contact for generator start (1A relay).
Enclosure	Indoor only, IP20. 84.9 lb (38.5 kg). Operating range −10 to 55°C, derated above 45°C.

AC terminals, conductors and torque (manual wire gauge guide, copper)



Circuit	Manual conductor	Torque
GRID L1, L2, N	2/0 AWG	132.7 lb-in (15 Nm) on L1/L2
LOAD L1, L2, N	3 AWG	31.0 lb-in (3.5 Nm)
GEN L1, L2, N	6 AWG	17.7 lb-in (2.0 Nm)
Smart Load	6 AWG	17.7 lb-in (2.0 Nm)
Neutral bar	(per circuit)	34.5 lb-in (3.9 Nm)
Ground (PE)	4 AWG grid/load, 6 AWG other	22.1 lb-in (2.5 Nm)

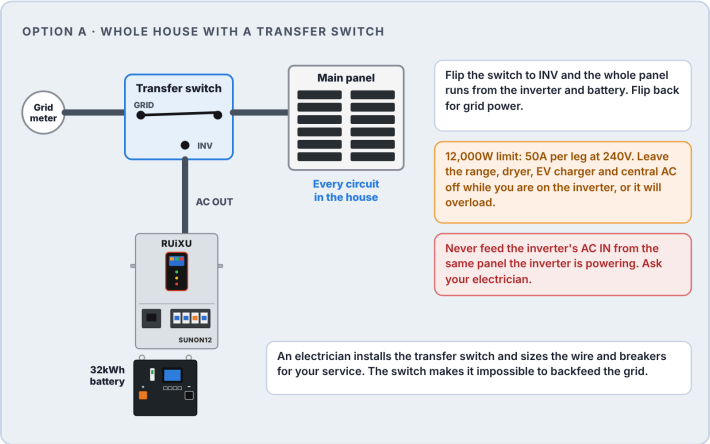
- All neutrals land on one neutral bar, all grounds on the PE bar.
- The manual notes distance limits vary per install. Size to code for the actual run and the feed breaker.

Menu items that affect the AC side (Setting menu)

Menu	Item	Options and default
AC	N Line Ground	Disabled: N is never connected to PE. Enabled: N bonds to PE in off-grid mode and opens as soon as grid bypass is available. Set to suit where the neutral is bonded. Option C needs Disabled.
Advanced	Output Phase	Split 180° (default) is 120/240V split phase. Leave it there.
AC	Output Volt Set	100, 105, 110, 120 or 127V line to neutral. Use 120.
EMS	Output source priority	Grid Mode, Battery Mode or Hybrid Mode.
EMS	Max AC Charge Current	0 to 160A. Default 120A.

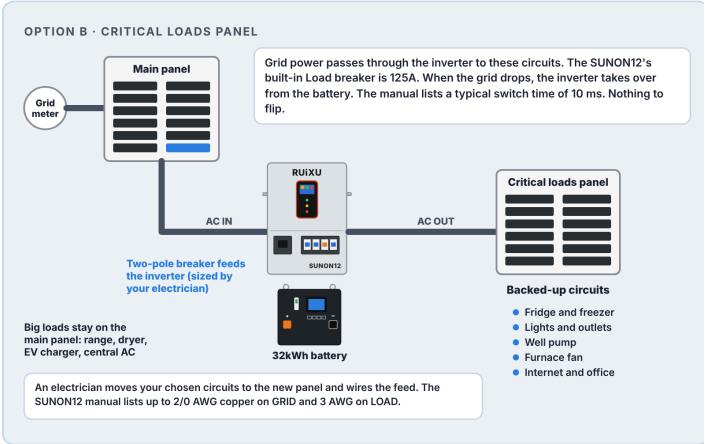
The three connection options (homeowner picks one: ☐ A ☐ B ☐ C)

Option A: whole house with a transfer switch



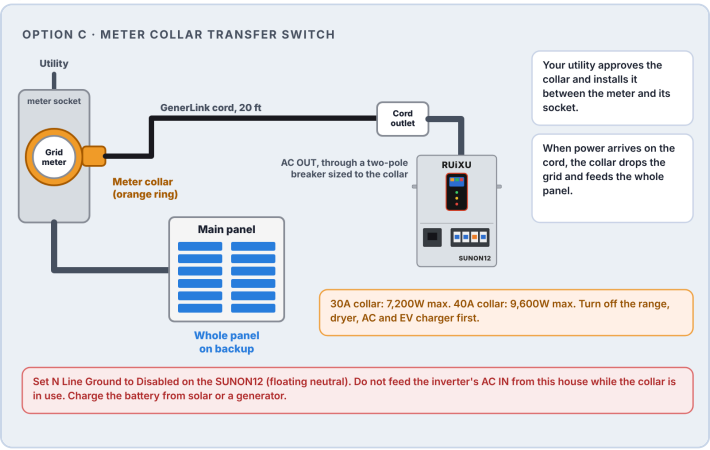
- Transfer switch between the meter and the main panel: grid on one source, inverter LOAD on the other.
- The whole panel runs from the inverter when switched over, limited to 12,000W (50A per leg).
- The homeowner turns off the range, dryer, EV charger and central AC while on the inverter.
- GRID (AC IN) is left unconnected, or fed from the grid side of the switch if the homeowner wants grid charging.

Option B: critical loads panel



- A two-pole breaker in the main panel feeds inverter GRID (AC IN).
- Inverter LOAD feeds a new critical loads subpanel.
- Chosen branch circuits move to the subpanel. Their total stays under 12,000W on battery and under the 125A Load breaker on pass-through.
- Large 240V loads stay in the main panel.

Option C: meter collar transfer switch



- The utility approves and installs the collar (for example GenerLink, 30A or 40A) between the meter and the meter socket. It transfers the whole panel.
- Electrician wires inverter LOAD through a two-pole breaker sized to the collar to an outlet that matches the collar's cord.
- Limit: 7,200W on a 30A collar, 9,600W on a 40A collar. The homeowner sheds big loads first.
- N Line Ground set to Disabled (floating neutral). PG&E's guide for its collar program recommends a non-bonded, floating-neutral source.
- GRID (AC IN) is not fed from this house while the collar is in use. The battery charges from solar or a generator.

Do not feed the inverter's GRID (AC IN) from the same panel the inverter is powering.

Circuits to back up (Option B) or to shed (Options A and C)

Circuit	Breaker A	120 / 240	Running W	Back up or shed

DC side, for reference

Battery	Yixiang 32kWh, 51.2V 628Ah lithium iron phosphate, JK 300A BMS, with its own breaker. Not UL listed.
Battery cables	2/0 AWG copper up to 12 ft, 4/0 AWG for 12 to 20 ft, copper lugs, 79.7 lb-in (9 Nm). Inverter battery breaker 300A.
PV	Two inputs. 500V max open circuit, MPPT 90 to 450V, 32A max each, 12,000W per input. Manual: 10 to 12 AWG, external PV disconnect 600V/40A.
Generator	Optional, on the GEN terminals: 240V split phase, 6 AWG, 63A built-in breaker.

Checks before first startup

☐ All breakers and disconnects off
☐ Battery polarity at BAT+ and BAT− checked with a meter
☐ PV polarity and open-circuit voltage under 500V on each string
☐ GRID and LOAD on the correct terminals: L1, L2, neutral bar, PE bar
☐ Ground from the PE bar to the panel ground
☐ Neutral and ground bonded in one place only, N Line Ground set to match
☐ Wiring box cover back on
☐ Startup order: battery breaker, grid breaker, PV switch, battery on, power button, remaining breakers
☐ 240V L1 to L2 and 120V each leg at the panel
☐ New panel and breakers labeled

Ask the inspector before work starts: permit requirements for this address, whether the equipment's listing marks are acceptable, and whether the PV array needs rapid shutdown. Check the label on the inverter for its listing marks. For Option C, the utility decides whether a meter collar is allowed.

Electrical figures are from the RUiXU SUNON12 user manual (file SUNON12-manual-20260630). If the homeowner bought the Powland 12kW or the EG4 12000XP, use that inverter's manual for conductor sizes, breakers and menu items. Size conductors, overcurrent protection, bonding and transfer equipment to local code and the service at this address. This sheet does not replace the manual, a load calculation or a permit.