

PURPOSE

CAUTION: Read this erratum sheet *before wiring the DC PV array to the Sun Tie XR*. Failure to follow these corrections may cause damage to the Sun Tie XR unit.

This Erratum corrects the following discrepancies in the Sun Tie XR Manual part number 975-0003-01-03 Rev A.

1. Corrects the wiring of the combiner board bypass terminals
2. Clarifies conduit installation
3. Clarifies system grounding
4. Adds details on the unit specifications

COMBINER BOARD BYPASS TERMINAL WIRING

Two bypass terminals have been added to the combiner board. However, they are incorrectly labeled in the Sun Tie XR Installation manual P/N 975-0003-01-03 Rev A.

The positive (+) and negative (-) terminals on the combiner board, shown in the photographs on page 3 (Figure 2-1) and page 13 (Figure 2-11) of the Sun Tie XR Operator's manual (#975-0003-01-03 Rev. A), are *reversed*. The correct terminal call-outs are shown below.

Ensure the polarity of the solar PV array is wired according to the photo below.



NOTE: This error only affects the wiring of the bypass terminals. All fused combiner board inputs are correctly labeled in the manual and on the PCB. The polarity indication is silk screened on the combiner board's PCB for the bypass terminals.

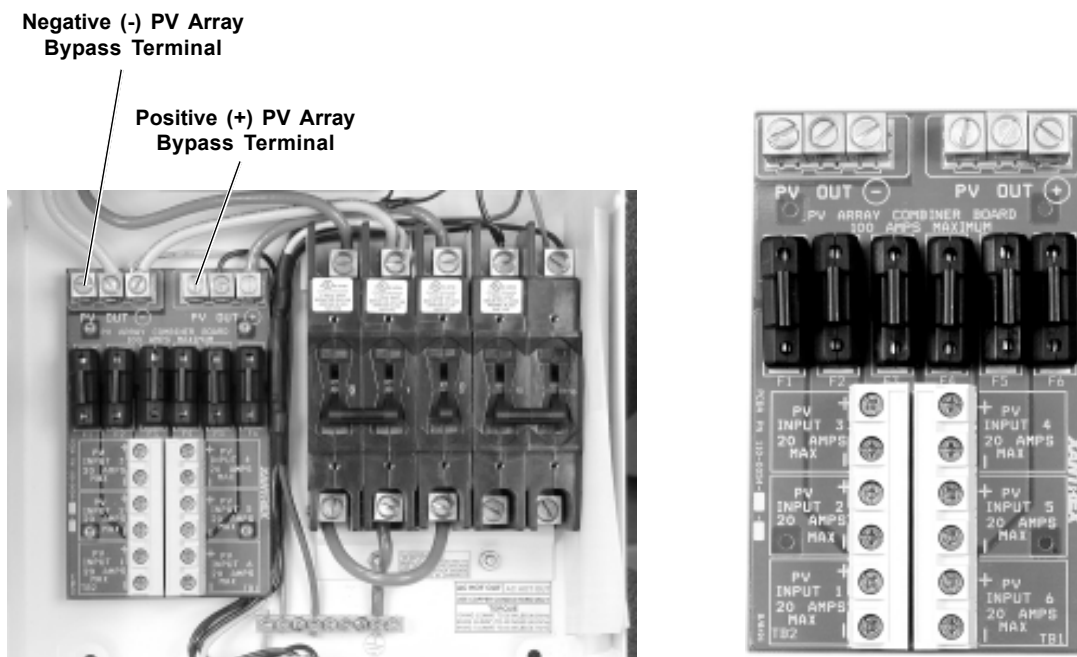



Figure 1
Correct Polarity of the Combiner Board Bypass Terminals
(Corrects Figure 2-1 and 2-11) and Silk Screen

The POSITIVE (+) and NEGATIVE (-) wires on the DC voltmeter shown in Figure 3-2 of the Operator's manual are shown connected to the DC terminals reversed. When checking the DC array voltage, connect the voltmeter wires as shown below.

 **NOTE:** *Placing the DC voltmeter probes as show in manual 975-0003-01-03 Rev. A will not cause any damage to the meter or Sun Tie XR unit. The measurement on the voltmeter, however, will read negative polarity (i.e., -50 VDC).*

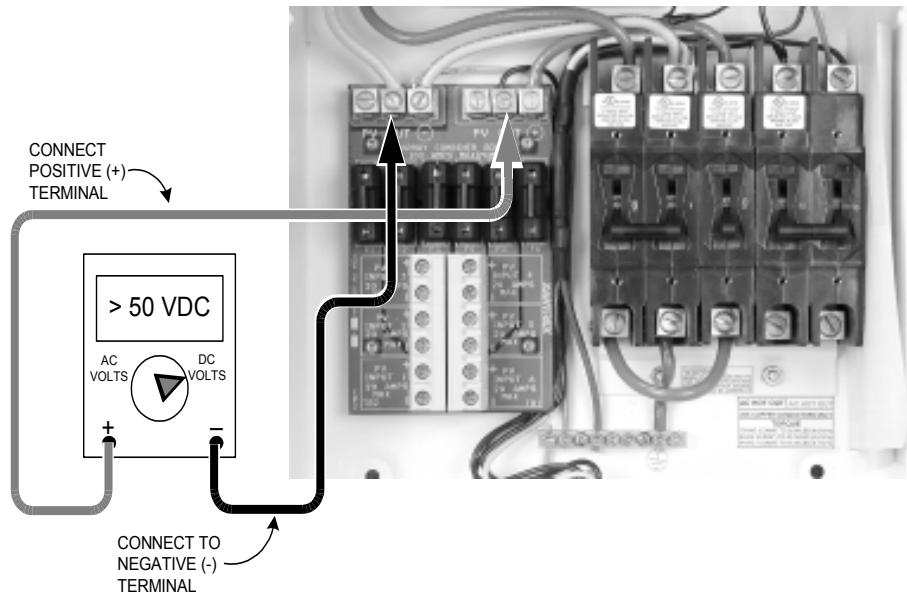


Figure 2
Correct Polarity of the DC Voltmeter
(Replaces Figure 3-2)

The second "NOTE" on page 3 contains a typo and reads "...by using the positive and egative bypass terminals on..." This sentence should read "...by using the positive and **negative** bypass terminals on..."

CONDUIT INSTALLATION

It is recommended that metallic conduits are used for AC and DC wiring.

The following are changes to the grounding procedure on page 18 and 19 of the Operator's manual (975-0003-01-03 Rev. A). These instructions supercede the procedures in the manual.

EQUIPMENT GROUNDING

The Sun Tie XR is designed to have all PV positive, negative and ground conductors connected inside the Sun Tie XR's access area. The PV equipment ground should be connected to the Sun Tie XR's ground bar. This ground bar must also be connected to the main utility breaker panel's ground bar which must be connected to a ground rod according to the NEC requirements. Verify that there is an AC ground/neutral bond in the *main utility breaker panel* and that no other ground/neutral bonds exist in the system.

To protect the equipment from lightning damage, a single point grounding system should be used. In this system, all ground lines terminate at the same point. This point normally is the main utility ground installed by the utility company to provide a ground for the house wiring. This ground usually consists of a copper rod driven 6 to 8 feet into the earth (Figure 2-17).

It is recommended that if the inverter is greater than 8 feet from the utility ground rod, a second ground rod should be added (Reference NEC 250.56) and bonded to the same point (Reference NEC 250.58) to minimize the impedance to ground and maximize system protection.

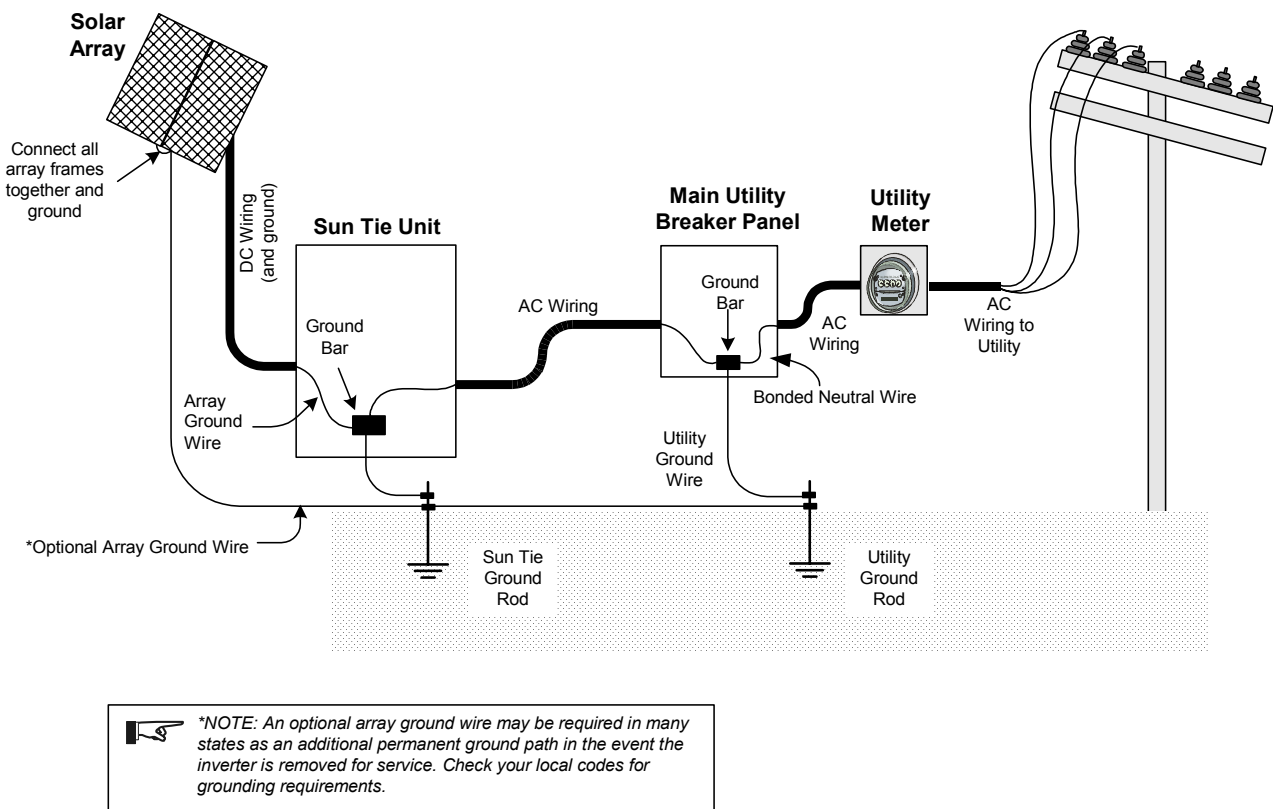


Figure 2-17
Typical Roof Mount Installation Grounding

If the solar array is located a considerable distance from the Sun Tie, then an additional ground rod must be installed close to the solar array for the most reliable lightning protection (Figure 2-18). The grounded frame of the solar array provides a direct route to dissipate lightning strikes via the close ground rod. Please reference *NEC 2002 250.53 - Grounding Electrode System Installations* and *NEC 2002 250.70 - Methods of Grounding and Bonding Conductor Connections to Electrodes* for specific grounding requirements.

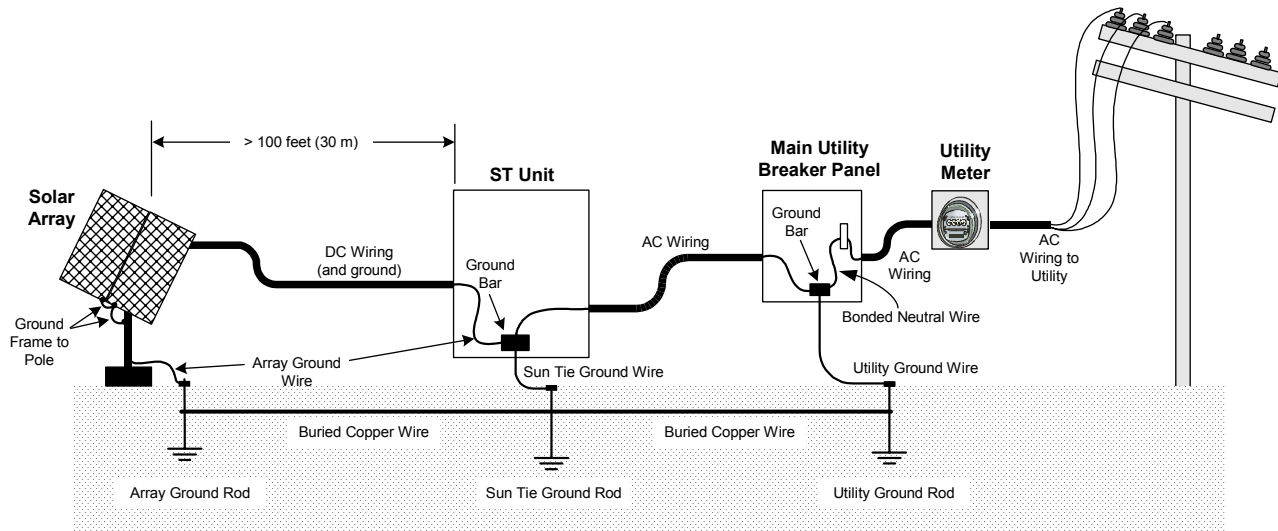


Figure 2-18
Long Distance Grounding

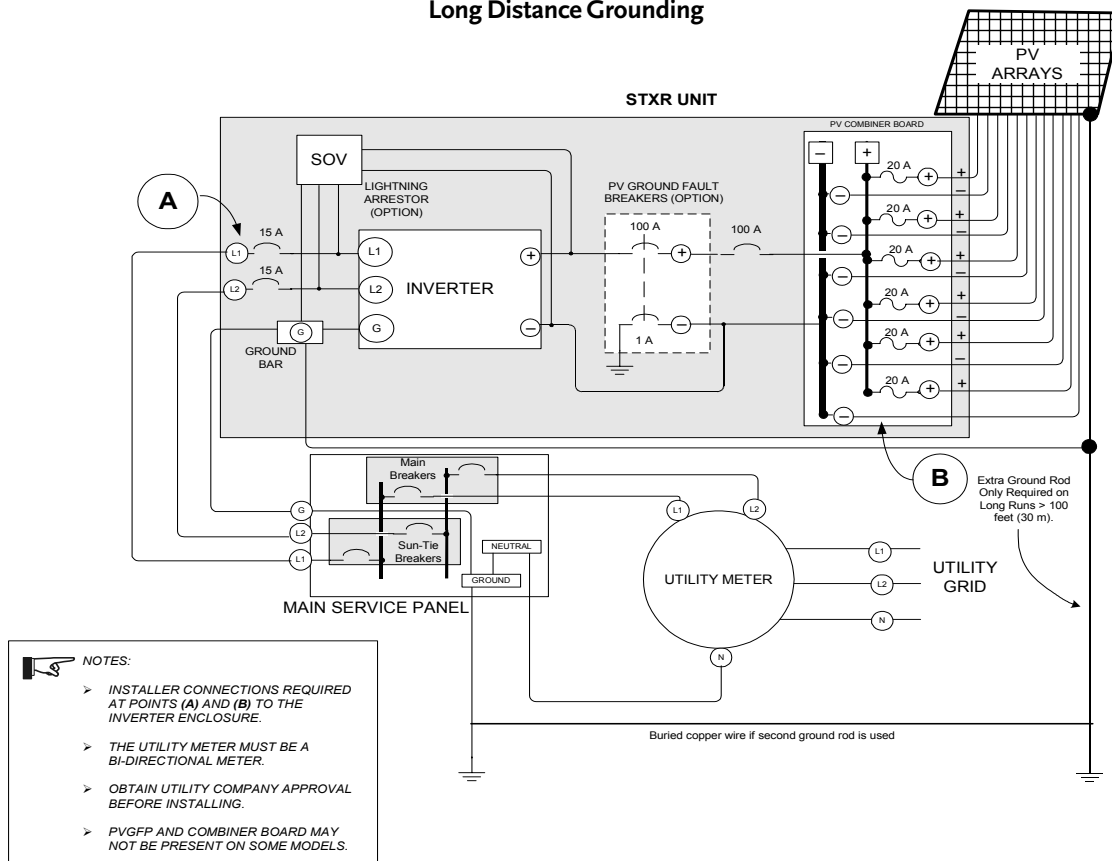
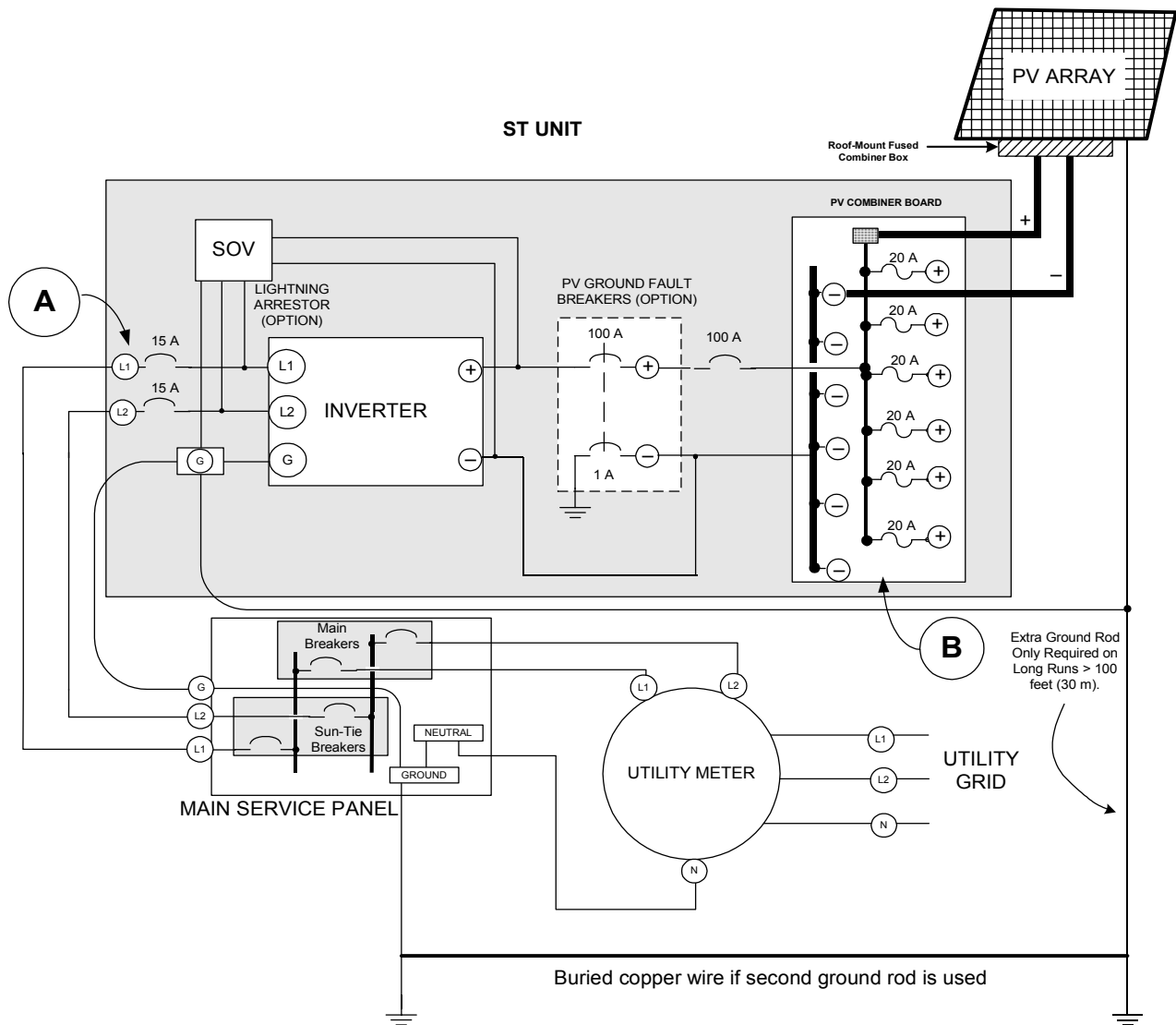


Figure 2-19
Simplified Electrical Wiring Diagram (Typical for STXR1500 and STXR2500)

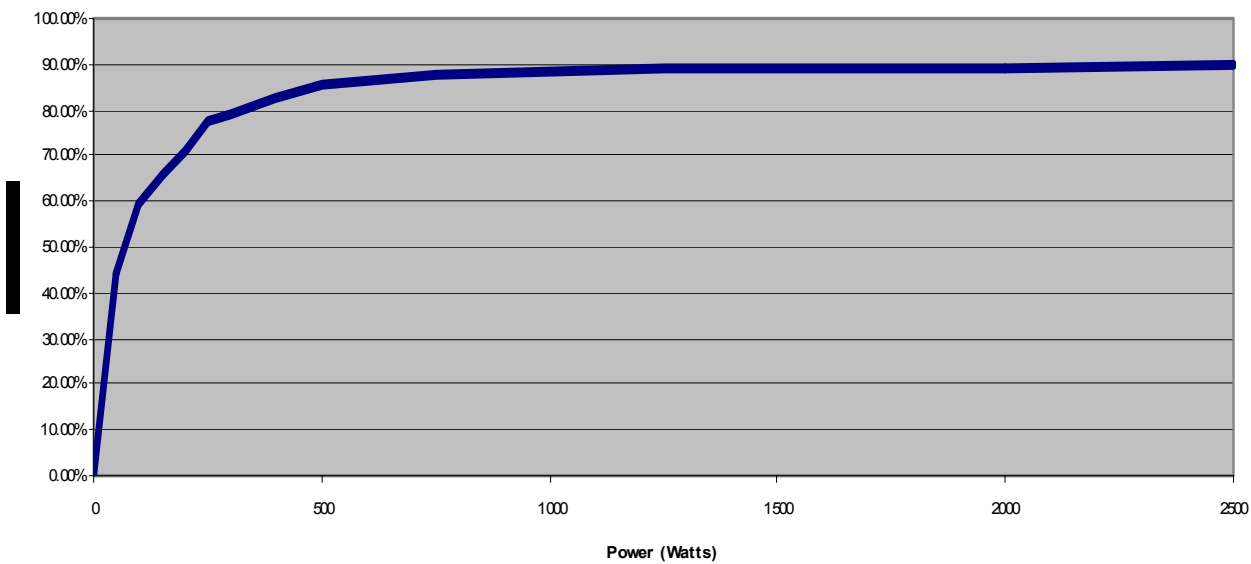


- NOTES:**
- INSTALLER CONNECTIONS REQUIRED AT POINTS (A) AND (B) TO THE INVERTER ENCLOSURE.
 - THE UTILITY METER MUST BE A BI-DIRECTIONAL METER.
 - OBTAIN UTILITY COMPANY APPROVAL BEFORE INSTALLING.
 - PVGFP AND COMBINER BOARD MAY NOT BE PRESENT ON SOME MODELS.

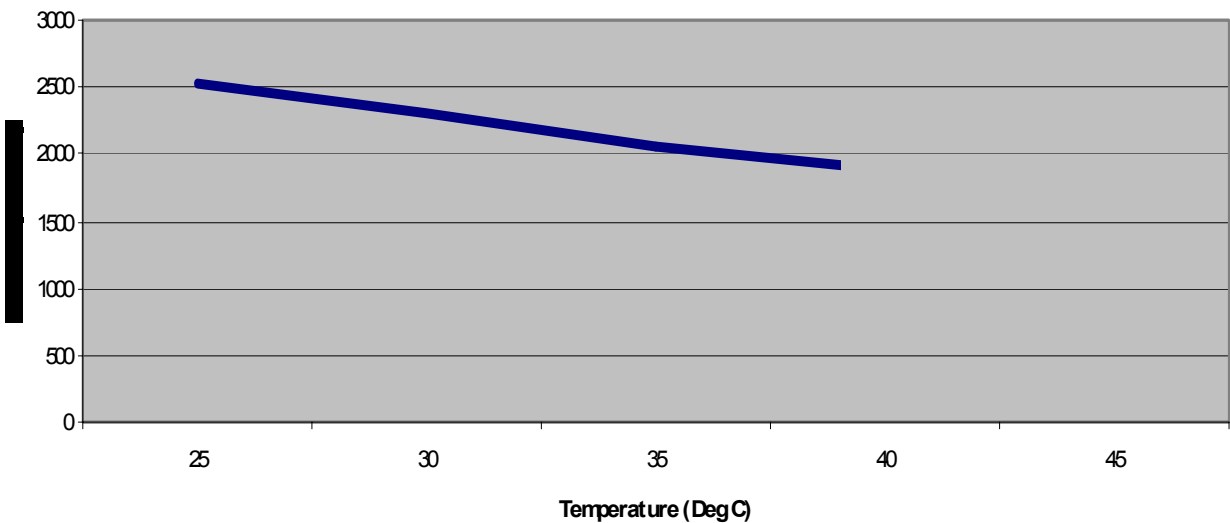
Figure 2-20
Simplified Electrical Wiring Diagram
(using the PV bypass lugs and an externally fused combiner)

Efficiency Curve and Derating Curve

Suntie XR Series Efficiency Curve



SunTie XR Series Temperature Derating Curve



ERRATUM SHEET FOR MANUAL 975-0003-01-03 REV. A SUN TIE XR

SPECIFICATIONS

Electrical Specifications	STXR1000	STXR1500	STXR2000	STXR2500
AC Output voltage	240 VAC			
AC Output Voltage range	211–264 VAC			
Continuous AC output @ 25 °C	1,000 VA	1,500 VA	2,000 VA	2,500 VA
Continuous AC output @ 45 °C	1,000 VA	1,500 VA	1,700 VA	1,700 VA
Efficiency (peak)	92%		94%	
AC output characteristics	Current source			
Frequency (nominal)	60 Hz (+ 0.5 Hz, - 0.7 Hz default per IEEE929 and UL 1741)			
Input voltage (nominal) Typically four nominal 12 VDC PV modules	48 VDC			
Sunsweep™ Maximum Power Point Tracking voltage range	44–85 VDC			
Minimum input DC voltage (for inverter wake-up)	50 VDC			
Full Power Output Voltage Range	52-85 VDC	52-85 VDC	52-85 VDC	52-75 VDC
Absolute Maximum PV open circuit voltage (Voc)	125 VDC			
AC output waveform	Sine wave, high frequency PWM controlled			
Total harmonic Distortion	less than 5% at rated power per IEEE929 and UL1741			
Mechanical Specifications				
Specified temperature range (operating) (non-operating)	-38–113 °F (-39–45 °C) -40–140 °F (-40–60 °C)			
Enclosure Type	Outdoor, rainproof*, powder coated aluminum enclosure, fully screened			
Dimensions (inverter only)	33.25"H x 13.25"W x 5.3"D (83.1 cm H x 33.8 cm W x 13.25 cm D)			
Dimensions (shipping)	37.75"H x 15.75"W x 9.5"D (94.4 cm H x3 9.4 cm W 2x 3.8 cm D)			
Weight (inverter only)	35 lb (15.9 kg)			
Weight (shipping)	40 lb (18 kg)			
Mounting	Vertical wall mount only			
Standard Features and Options				
PV ground and fault protection system	–	Standard	–	Standard
PV combiner board with 6 fused inputs, 20 amps maximum per input	–	Standard	–	Standard
Lightning Arrestor–combined AC/DC protection	Standard			
*Rain Shield (STRS) protective rain shield (required for outdoor installation)	Option			
STRM- Remote Meter Optional remote display of status, resettable Wh meter, tech menu, and daily energy harvested, includes 50 ft. cable	Optional Accessory			
Forced air cooling	Standard forced air AC brushless fan			
Islanding protection	Standard over/under AC voltage and frequency detection plus active islanding protection–meets IEEE 929 and UL1741 requirements			
User display	Standard backlit alphanumeric LCD display for system status and daily energy harvest (Wh)			
AC disconnect	Standard double-pole, 15 amp, 240 VAC branch rated circuit breaker			
DC disconnect	Standard single-pole, 100 amp, DC rated circuit breaker			
Listings	UL Listed to UL1741and cUL Listed to CSA C22.2 No. 107.1-95			

Specifications subject to change without notice.
Specifications @ 25 °C.

References:

National Fire Protection Association (2002). *NATIONAL ELECTRICAL CODE*.
Massachusetts: R.R. Donnelley/Willard.