









## POWER SUPPLY OPTIONS FOR WATTSUN SOLAR TRACKERS

Wattsun Tracker motors require 24 VDC power to operate. If the power supply is from a 24 VDC battery then you do not need a voltage conversion device. Otherwise consult this chart for an appropriate power supply.

Converter	Battery Bank Input Voltage	Part Number	List Price	Notes
	12-18 VDC	W12-24 LVC	\$130.00	Steps up 12VDC from a battery bank to 24VDC required by the tracker controller.
	24 VDC	None Required	-	The standard input for a Wattsun Solar Tracker Controller is 24 VDC. Typical voltage inputs can range from 22 VDC to 38 VDC.
	48-66 VDC	W48-24 LVC	\$58.00	Steps down 48 VDC from a battery bank to 24VDC required by the tracker controller. The tracker but must tap power from 3 series 12 VDC modules. Will not work with 24 VDC modules in a 48 VDC "array direct" configuration. Water pumps must have a pump controller installed for the 48-24 LVC to operate in an "array-direct" mode. One required for one AZ-125 tracker.
	24-100 VDC	BZ Products X8a	\$150.00	Steps down 48 VDC from a battery bank to 24VDC required by the tracker controller. Water pumps must have a pump controller installed for the 48-24 LVC to operate in an "array-direct" mode.  Will power the tracker controller from a high voltage water pumping array. One required per two AZ-125 trackers or one AZ-225 Tracker.

Power Supply	Input Voltage	Part Number	List Price	Notes
	85-265 AC 84-350 DC	IDEC PS5R-SF24	\$165.00	AC/DC to 24 VDC Switching Power Supply. Accepts 115 or 230 VAC input. Powers the tracker controller from an AC Grid when no back up battery bank is present. Needs to be mounted in a rain tight box if located outside.  One required per two AZ-125 trackers or one AZ-225 Tracker.
	85-264 AC 120-370 DC	Meanwell DR-4524	\$145.00	AC/DC to 24 VDC Switching Power Supply. Use to power the tracker controller from a high voltage water pumping array. Needs to be mounted in a rain tight box if located outside.

## BATTERY BANK AND GRID-INTERTIE CONNECTIONS

Battery Bank and Grid- Intertie power feeds to the tracker controller should be independent of the PV array circuit.

### *Battery Bank Connection*

When a battery bank is the power source the component flow is:

- Battery Bank → Converter (if necessary) → Wattsun Solar Tracker Controller

### *Grid Intertie Connection*

When the AC Grid is the power source the component flow is:

- AC Source → AC to DC Power Supply → Wattsun Solar Tracker Controller

## ARRAY DIRECT FOR WATER PUMPING CONNECTIONS

*(PV Array Direct connections limit the Azimuth Tracking arc to a maximum of 180 degrees. That might mean a 30% loss of available power during the Summer. The Azimuth Tracker will not return back to the East in the evening. Do not rely on a PV Array Direct connection for battery charging or grid-intertie systems. Older Tilt & Roll Trackers were not hampered by this issue.)*

### *PV Array Direct*

When a PV Array is the power source the component flow is:

- PV Array Output → Converter (if necessary) → Wattsun Solar Tracker Controller

## TRACKER POWER CONSUMPTION

Azimuth Trackers typically consume 20 watt-hours or less per day during normal operation. The Azimuth motor consumes a maximum of 2 Amps @ 24VDC and the Elevation motor consumes 3 Amps @ 24 VDC.

## LOCATING THE CONVERTER OR POWER SUPPLY

The system designer is required to make a decision concerning the proper wire sizing of the AC or DC wire run to the tracker. For long distances between the source and the tracker, many installers will mount the DC/DC Converter or AC/DC Power Supply at the tracker. This avoids excessive voltage drops and the cost of larger diameter power wire.