

What is AC polarity, and how can I determine when it's correct at the campground pedestal?

Understanding the nuances of electricity can be most confusing and daunting. The biggest problem is our propensity to confuse what we know about the RV's DC battery systems with the AC system. Each system has it's own set of rules and most are not interchangeable.

While DC current flows in one direction only, in North America the AC system operates at a frequency of 60 cycles per second or Hertz and it alternates directions. Direct Current has a polarity of positive and negative which remain constant; positive is always positive and negative is always negative. Alternating Current, on the other hand, switches polarity between the hot and neutral wires sixty times per second.

Picture "time" as a straight line drawn across a piece of paper. Above the line is considered positive voltage, below the line it's a negative voltage. Therefore the polarity is positive half the time and negative half the time. They are said to have a polarity of alternating values. Obviously too fast to measure with a typical volt meter. An oscilloscope, however, will clearly show the alternations in the form of a measurable Sine wave.

Wiring is accomplished via a "hot" (black) and a "neutral" (white) along with a third, uninsulated grounded wire. In theory, many AC devices would still operate okay with reverse polarity, (Remember seeing lamp plugs that could be plugged in either way?), but polarity is most important for people and pets around the RV. AC polarity is easily checked with a device called a polarity tester. It simply plugs into one of the receptacles inside the RV and a series of LED's indicates if the polarity is correct or if the hot and neutral incoming wires are reversed, or if any of the wires in the circuit are "open" (not connected). Consider it extremely value-priced (cheap) insurance that could save your life in some situations. No RVer should be without one.

We recommend checking the voltage and the polarity at the campground pedestal before even connecting the shoreline cord. If the voltage is between 105-volts and 130-volts AC and the polarity is correct, you know it is safe to plug in. Also consider the addition of a surge protector for your rig. Both high and low AC voltages can be damaging to sensitive equipment on the RV.