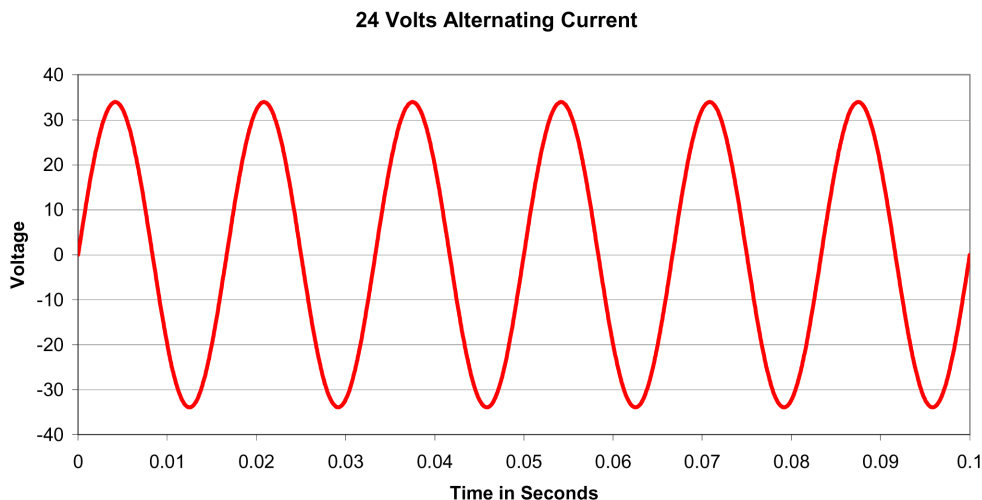




24 VAC

If you were to connect an oscilloscope to the output of a 24 VAC transformer, you would see the waveform below.



The voltage starts at zero, climbs to a peak, returns to zero, falls to a negative peak and returns to zero; sixty times a second for 60Hz and 50 times a second for 50Hz.

HALF-WAVE POWER SUPPLY

Half-wave power supplies only take power from the AC line during the positive half of the AC waveform. Most controllers use half-wave power supplies.

BAPI's VC350A EZ and VC350A are half-wave power supplies. Half-wave power supplies may be powered from the same transformer that powers the controller if the controller has a half-wave power supply and the capacity of the transformer is not exceeded.

Transformers used in half-wave power supplies have one of their output leads connected to ground. When powering multiple half-wave power supplies from one transformer, be sure to check for proper transformer connections.

Since only half of the incoming AC is used, half-wave power supplies in 24 VAC systems can only source approximately 1.5 amps of DC maximum.

FULL-WAVE POWER SUPPLY

Full-wave power supplies take power during both halves of the AC waveform.

BAPI's PS17 and PS17CB are full-wave power supplies. The VC2700-STM and VC3000 are available as full-wave or half-wave (specified at time of order).

Transformers used in full-wave power supplies cannot have either of their output leads connected to ground. DO NOT try to power half-wave power supplies and full-wave power supplies from the same transformer. If you do, you will short out the transformer.

Half-wave and full-wave power supplies can coexist in the same control system but they must be powered by separate transformers.

Since both halves of the incoming AC are used, full-wave power supplies in 24 VAC systems can source approximately 3 amps of DC maximum.

If you need more information, please call your BAPI representative and ask for Application Note Understanding Full or Half Wave Power Supplies or find it online at www.bapihvac.com.