

Re: TIG inverter project – new thread

Source: <http://sci.tech–archive.net/Archive/sci.electronics.design/2005–11/msg00156.html>

- *From:* Glen Walpert <gwalpert@xxxxxxxxxx>
 - *Date:* Wed, 02 Nov 2005 13:56:25 GMT
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On 1 Nov 2005 03:55:03 –0600, The Phantom wrote:

>On Mon, 31 Oct 2005 14:36:38 GMT, Glen Walpert wrote:

>>>>> I think the way to characterize a "full wave" recitifier is that it draws
>>>>>pulses of current from both the positive and negative polarity of the grid
>>>>>voltage, be it single or 3–phase. Thus, the arrangement in the welder
>>>>>which has the similarity to a single phase center–tapped topology is a
>>>>>"full wave" rectifier in this sense, and so is the 6–phase bridge
>>>>>arrangement.

>>

>>I would be inclined say that a full wave rectifier draws current on
>>the positive and negative polarity of the *rectifier input*, not the
>>line input to its transformer. By this definition the 6–phase design
>>is half wave, all of the transformer secondary windings see current in
>>one direction only even though the primary windings see current in
>>both directions. But this is inconsistent with the terminology used
>>in single phase CT xfmr 2–diode config, so perhaps you are right here
>>and both the 6–phase and 3–phase bridge rectifiers should be referred
>>to as full wave.

>

> Does the term "full wave" even get used in the standard descriptions of these
>topologies?

Outside of this thread? Not sure.

>>The 6–phase configuration has 6 different phases present on the
>>rectifier input, measured WRT the transformer secondary neutral. The
>>3–phase bridge has only 3 phases on the rectifier input measured WRT
>>the transformer neutral, regardless of having the same ripple as the
>>6–phase rectifier.

>

> So would you call the ripple at the output of a 3–phase bridge "6–phase"
>ripple, or "3–phase" ripple?

Ripple with a 360 Hz fundamental. Once you have the ripple the
circuit topology which produced no longer matte