

Exercise bike - Fisher & Paykel washing machine motors for electricity generation

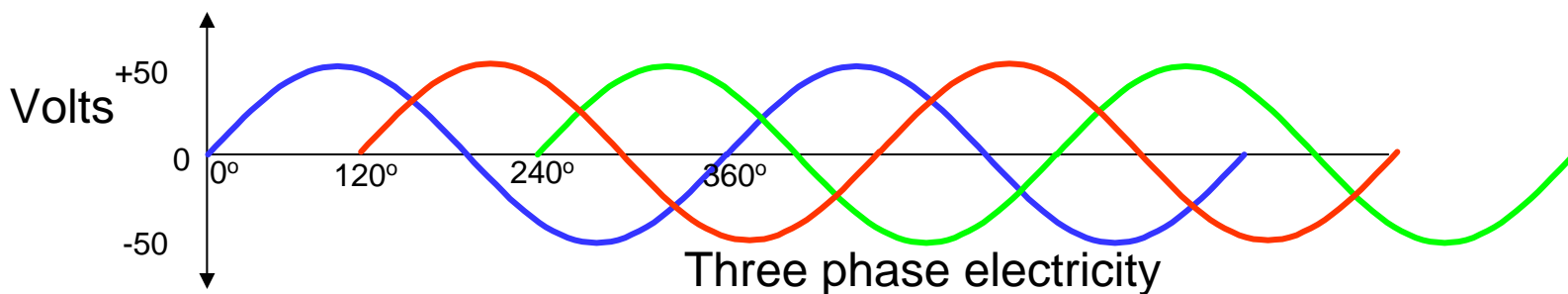
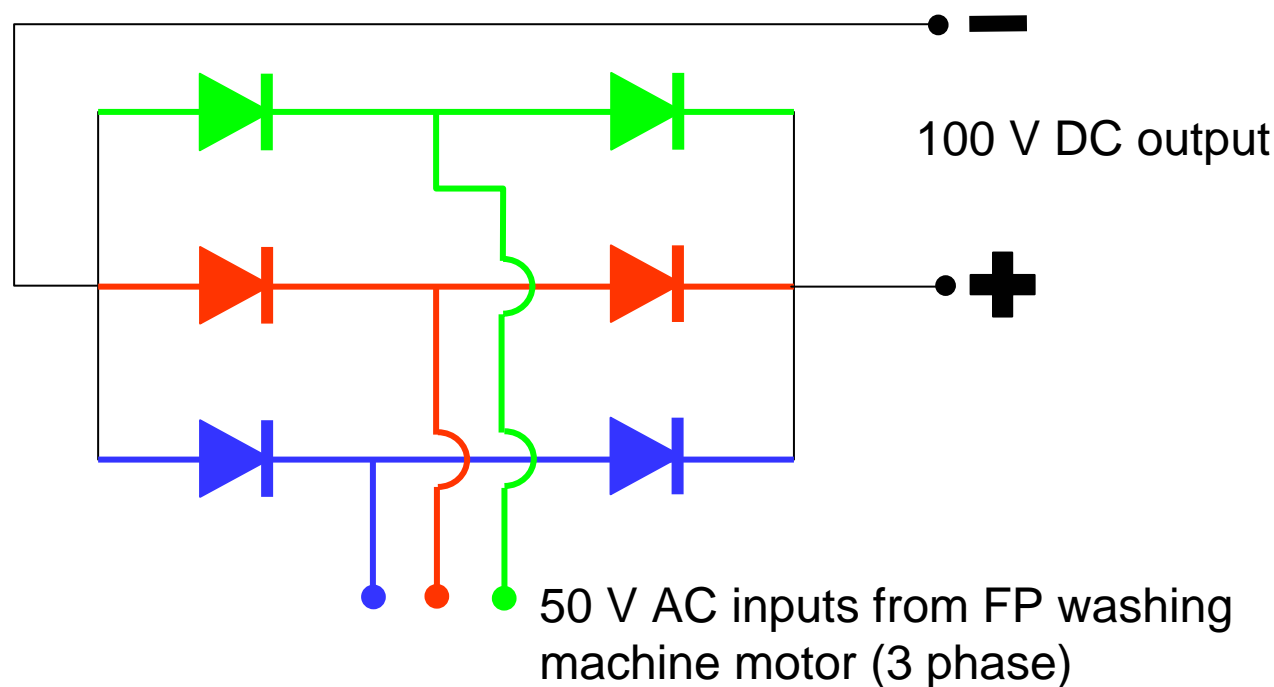


Contact: Jonathon Thwaites, <http://www.sustainability.fm.uwa.edu.au>

Generator using a Fisher & Paykel washing machine motors

- The Fisher and Paykel smart drive motor is a permanent magnet motor.
- Most electric motors used in household equipment do not have permanent magnets.
- The permanent magnets mean that these motors make good electricity generators.
- When a magnet passes by a wire it induces a current in it.
- The permanent magnets in the rotating drum part of the motor pass by the coils of wire on the metal spindles of the stationary part of the motor inducing currents in the wire.
- Coils are used so that the length of wire passing the magnet is longer and the current induced larger.
- The motor generates 3 phase 50 V AC electricity (this can be altered with rewiring).
- A 3 phase rectifier (used here) can be added to the motor output to make 100 V DC.
- Most household electric motors (brushed motors) will run on DC quite well.
- Induction motors like those in household fans will not run on DC.

Three phase rectifier added to generator from discarded Fisher & Paykel washing machine motor



Fisher & Paykel washing machine motor other issues

- Ultraviolet light and rain cover
- The Smart Drive plastic rapidly degrades in sunlight and will crack, so keep it covered. A bucket is cut to fit is good.
- Rain will rust the metal winding pegs.

Reference information

- Making Smart Drives smarter, Michael Lawley, Renew, Vol 89 page 62 Oct 2004
- An argument for micro-hydro, Jeffe Aronson, Renew, Vol 84, page 66, July 2003
- Making a small, portable backup generator, Warwick Smith, Renew, Vol 87, page 49, April 2004
- Fisher & Paykel Smart Drive Washing Machines – Conversion to Generators in Renewable Energy Systems – a Technical Guide. EcoInnovation, 671 Kent Rd RD1, New Plymouth, New Zealand, ph:(NZ)06 752 2765, <http://www.ecoinn.co.nz>
- Renew is from: Alternative Technology Association, <http://www.ata.org.au>

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