

## SINIMOD™ (...WNxx...) –WINDMILL POWER CONTROLLER FOR HEATING USE

FinnProp® SINIMOD™ – heater controllers utilize state of the art modified sin wave technology. The smooth load it provides saves wear and tear on the generator and can add years to the life span of a windmill power station. The controller accurately measures the generator's true *rms* voltage and current, and shows their values, along with power and frequency, on a built-in display screen. The power value (calculated from voltage and current) serves as the feedback parameter for the control circuit. The load can be any resistive appliance, e.g. floor-heating cables, heating units in heat storage tanks, electric radiators, etc. The load must be symmetrical and Y wired. A certified electrician can easily attach a suitable 3-lead thermostat to the heater controller, and due to automated constant load monitoring, manual system configuration changes are not necessary. Standard 5-lead cable is suitable for wiring. When the heater controller registers a change in load resistance, (e.g. when appliances are wired in parallel) the voltage is immediately corrected to meet specified power requirements.

## MODELS

Both PRE and EC versions of this product are available, and both can be delivered either as a standalone device (receiving the power it needs from the generator and batteries) or run off a grid. Three CURRENT-IN options to choose from (16, 29, or 40A) and each controller can be fitted with either one or two outputs. Powerful, factory installed algorithms ensure optimum performance over a wide range of operating conditions.

## SPECIFICATIONS

- Auxiliary power:.....single-phase 230VAC (<1A) *or* none (standalone)
- Input voltage range L-N:.....42-380VAC *rms* (EC)      42-288VAC *rms* (PRE)
- Input voltage range L-L:.....73-658VAC *rms* (EC)      73-500VAC *rms* (PRE)
- Monitored phase(s) (current and voltage)...L3 (EC)      L1, L2, L3 (PRE)
- Input frequency range:.....1-80hz
- Max input current:.....16 / 29 / 40A~
- Power output at 400VAC (L-L):.....11 / 20 / 28 kW
- Min. load resistance ( $U_{L-N}=400VAC$ ):..... $R_{nom}/2$  (see example) / however not less than 5 ohm.
- Max. load resistance:.....200ohm

## OTHER GENERATOR REQUIREMENTS

- Y-wired, N-lead required.

## LOAD REQUIREMENTS

- Y-wired, symmetrical, resistive three-phase load. N-lead REQUIRED.
- It is strongly recommended to increase appliance power (nominal resistance load) by 10% when calculating compatibility.
- Sample calculation:
  - Appliance specifications:  $U_{L-N} = 230\text{VAC } rms$ ,  $P = 5\text{kW}$
  - Calculate nominal resistance:  $R_{nom} = \frac{U^2}{P} = \left( \frac{230^2 \cdot 3}{5000 \cdot 1,1} \right) \Omega = 28,9\Omega < 200\Omega \text{ OK!}$
  - Calculate current:  $I = \frac{P}{U} = \frac{5000\text{W}}{230\text{V} \cdot 3} = 7,24\text{A} < I_n \text{ OK!}$
  - As is the case with all resistive devices, heat dissipation and load duration should be considered!

### Circuit Diagram

