

Electrical Power for Welfare Cabins

Powerguard Priority LoadStart

Efficient, automatic, integrated and eco-friendly

Features

- Designed for welfare cabins
- Also ideal for caravans, boats and small properties
- Fully automatic power control
- Reduces the size of the generator required by up to 50%
- Saves fuel
- Saves maintenance
- Increases the working life of the generator
- Cuts costs, increases efficiency and increases reliability
- Input for a renewable energy source
- High powered battery charger
- Small loads powered by the battery reducing generator run time

Typical Input/Output The System Can Be Customised To Suit your application

- Input for external batteries
- Output Priority 1 - 230VAC - typical loads kettle and microwave - starts generator
- Output Priority 2 - 230VAC - typical loads space heater and water heater - starts generator
- Output 12V or 24VDC for lights and pumps
- Output 230V AC inverter at 200W
- Output to power sockets - 230VAC - live when the generator is running
- Output to fridge - 230VAC - live when the generator is running
- Output to control an auto-start generator

Overview

Welfare cabins are provided on virtually all building sites, construction sites and temporary repair and maintenance sites.

The cabins are designed to provide a comfortable space for operatives working outside often in bad conditions.

The minimum requirements are usually:

- Lights
- Space heating to provide warmth and drying.
- Hot water for washing
- Kettle for hot drinks
- Fridge to preserve food and drinks.
- Microwave for heating food.
- Power to charge phones, tablets and laptops.

The power to provide these facilities is usually from a generator using a diesel engine. A typical generator would be rated at about 12kVA. The generator would be running for most of the day and often all night too.

This results in high fuel consumption, high maintenance and shorter generator working life.

The Powerguard Priority LoadStart (PLS) is designed and manufactured to reduce the size of the generator, reduce fuel consumption, reduce maintenance and increase the working life of the generator.

The Priority LoadStart (PLS) is based on the well tried Powerguard LoadStart. The LoadStart senses when loads are applied and starts the generator to power them. When the load is removed the generator is shut down again.

The PLS has extra facilities to provide power efficiently to welfare cabins using the smallest generator possible and running it for the shortest time possible.

The PLS achieves this by having two outputs that are

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load sensing. If a load is applied to either of the outputs the generator is started and provides the power.

One of the outputs Priority1 is given priority over the other which becomes Priority2.

It is usual to allocate loads that are used for relatively short periods to Priority1. For example kettle and microwave. The loads allocated to Priority2 are usually background loads such as space and water heating. These loads can be interrupted briefly without impacting performance.

For example Priority2 is usually allocated to the space heater and water heater. The PLS will sense when a thermostat demands heat and the generator will be started powering the heater. The generator will stay on until the thermostat switches the heater off when it will shut down.

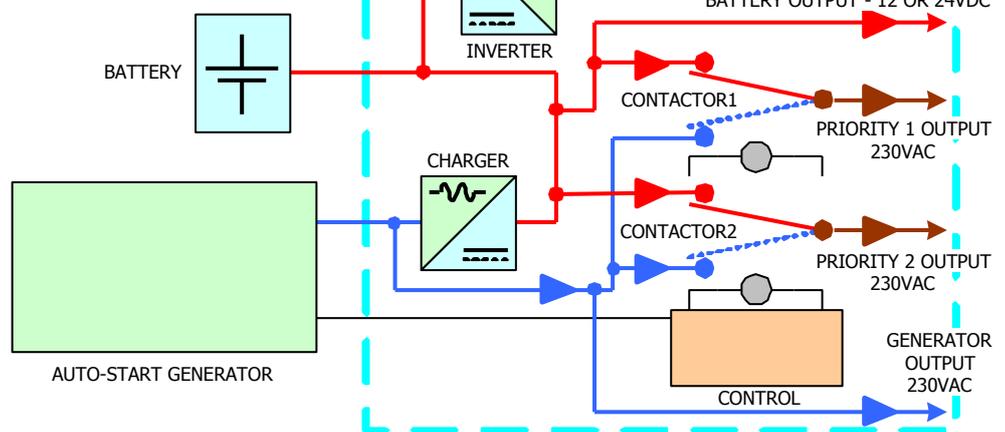
If Priority2 is controlling the generator to provide heating and a load, maybe a kettle or microwave is applied to Priority1 then Priority2 is switched off and the generator powers the new load. When the kettle or microwave is switched off Priority1 goes off and Priority2 is powered again.

The result is that the generator powering the welfare cabin can be half the size and will only run when a load is applied.

The PLS also has an input for a battery to be connected. The battery is charged when the generator is running. If the battery becomes too discharged the generator will be started to recharge for a period.

The battery provides power for the lights and small water pumps.

The inverter runs off the battery providing 230VAC at 200W to charge phones, tablets and laptops.



A TYPICAL PRIORITY LOADSTART INCLUDING AN EXTERNAL BATTERY AND AUTO-START GENERATOR

There are two outputs providing 230VAC power when the generator is running. One output is for a fridge and the other is for power sockets.

The PLS also includes a real time clock and calendar. This enables the user to inhibit the generator for periods during 24 hours with different times on some days. It also allows periods to be set during which the generator will run.

The PLS allows a power system for welfare cabins to be tightly controlled cutting costs by saving fuel, maintenance and generator run time.

Powerguard believes that the Priority LoadStart is the most cost effective and efficient off-grid power source available for welfare cabins and other small properties with the lowest cost of ownership.

The Powerguard PS System is built to British and European safety standards using industrial quality components and is reliable and cost effective.

Powerguard gives a two year return to factory warranty.

Powerguard manufactures power systems used in critical applications including hospitals, theatres, stadia, MOD sites, airports and public buildings.

We have many satisfied users and reference sites.

The sketch below shows the functions of the PLS. Priority 1 and 2 are load sensing circuits applying low voltage DC to the circuit and detecting when a load is applied. When a load is applied the generator is started and the contactor switches the output through to the load. When the load is removed the generator is shut down.