

SURE-POWER 1P-3P

ALLOW 3-PHASE ROLLER DOORS, GATES & CRITICAL MACHINERY TO OPERATE FROM A 240V, SINGLE PHASE SUPPLY



Numerous buildings now use automated roller doors and gates in areas where access is essential at all times.

The SURE POWER system can run 415V 3-phase electric doors and gates for many hours after the 240V utility supply has failed .

Warehouses, Supermarkets and car parks now have mandatory evacuation plans to provide a safe escape path for staff and visitors. Often these escape plans will include a path through powered roller doors and gate systems.

Until now, full compliance with these Safety Requirements has been difficult as a reliable battery powered Three-Phase supply has not been commercially available in Australia.

The SURE POWER system was developed in consultation with industry specialists to meet specific needs of evacuation systems and automated door controls in Australian buildings.

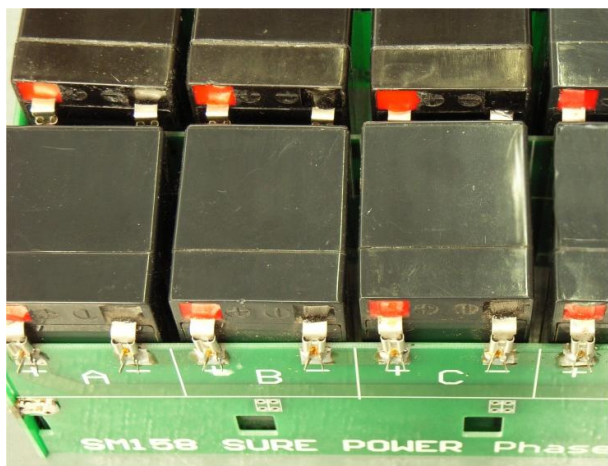
- When Single Phase AC Mains fails, SURE POWER will automatically activate and provide 3 Phase power for a minimum of 20 door or gate operation cycles.
- SURE POWER 1P-3P installation does not require modifications to drive systems. It uses 240V single phase to charge & manage a battery bank, which can produce 400V, 3 Phase power to suit most 3 Phase roller door and gate systems up to 2.5KW.
- An advanced Battery Management system ensures that battery condition is monitored continuously. (Batteries are a standard sealed lead-acid type)
- A 400W Neutral output is generated by the SURE POWER to extend a 240V AC supply to the control logic circuits required by some door systems.
- Auxiliary FIRE inputs take priority over manual control settings in emergencies.
- A special output is available to drive emergency doors to preset positions.

SURE POWER systems constantly monitor for AC power failure and Fire Alarm signals.

Depending upon the size of the motor load and power rating of the SURE POWER selected, it can maintain door control for hours, or even days in the absence of a Single Phase AC mains supply.

(Right – The Sure power operation panel)





An internal battery rack allows for easy maintenance of the backup supply.

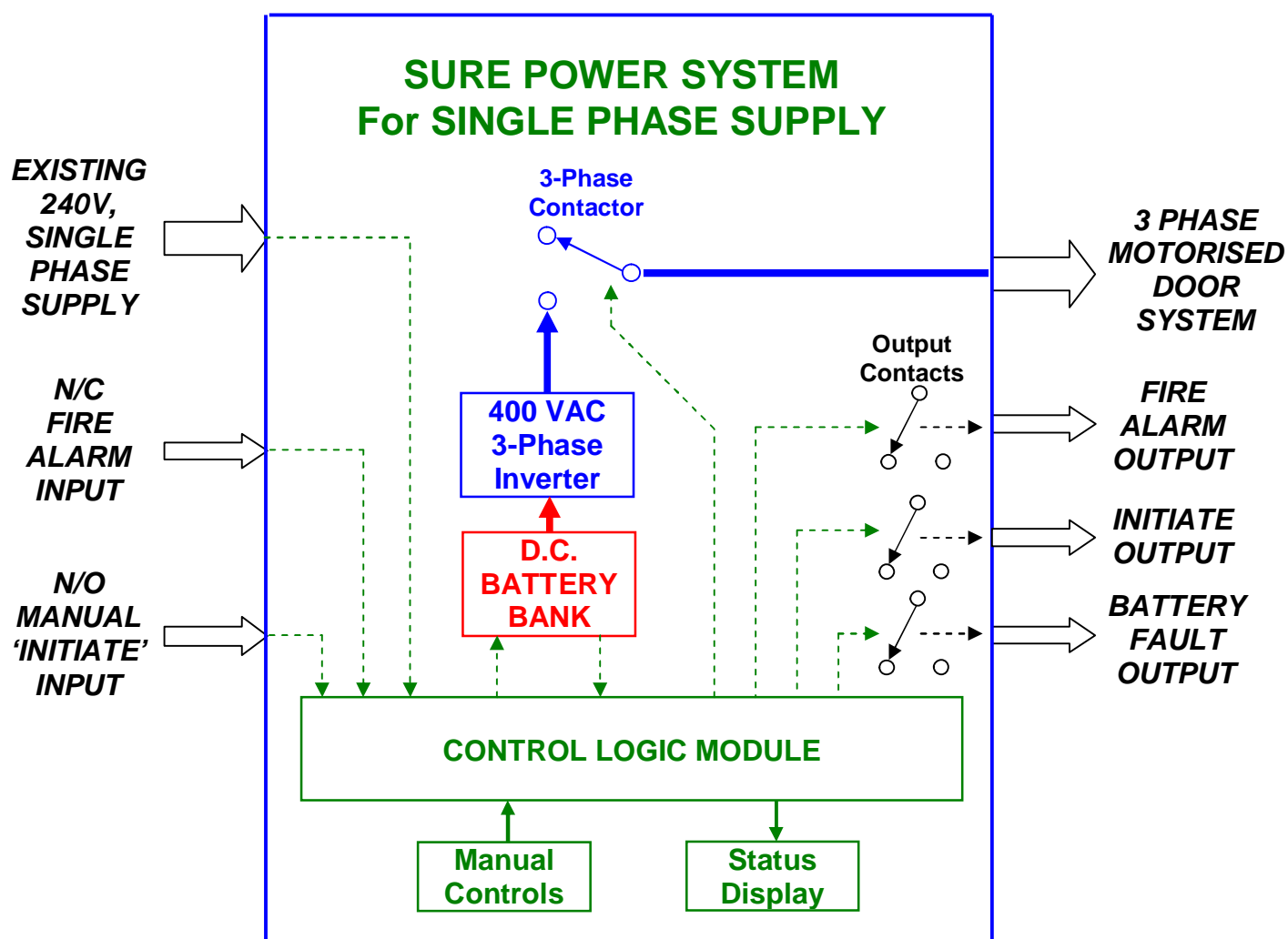
A unique battery management system ensures that the internal battery packs undergo a loaded integrity check for two seconds each minute while it is being charged and maintained. Any battery performance problems diagnosed by the system will automatically trigger an alert condition that can be monitored by control room staff or an optional strobe lamp.

Six red/green battery status indicators show the continuous charge and test cycles and will indicate any battery banks which perform below specs.

A range of models will provide 400VAC of 3 phase power up to 2.5 KW. A common 'Neutral' output is available to provide up to 400W of 240V power for integral controls in existing door and gate systems.

The batteries used in the Sure Power system are of a standard variety that will normally provide three years of reliable service. Where necessary, individual batteries within the bank can be unplugged and replaced quickly and safely.

Block Diagram of a Sure Power 1 Phase to 3 Phase installation



WHERE 415V 3PHASE AC SUPPLY IS AVAILIABLE, THE SURE POWER 3P- 3P MODEL WILL ALLOW 3 PHASE DOORS AND GATES TO OPERATE AS A BACKUP POWER SUPPLY.

(REFER TO THE SURE POWER 3P-3P BROCHURE FOR DETAILS ON THIS PRODUCT)

Manual Controls

In its normal state, the unit is connected to the utility AC supply so that the integral battery packs are automatically being maintained. In addition to the automatic processes, there is a 3-position selector switch for choosing one of three modes of operation.

- **Use Mains** This effectively places the Sure Power unit in a dormant state.
- **Automatic** The Sure Power unit will provide power to critical systems when Mains Power fails or when the 'Initiate Input' is triggered.
- **Use Batt** This will force the Sure Power system to continuously provide power from its internal batteries.
(this is a useful mode for performing system integrity tests)

Sleep Mode

Normally, when the Sure Power system has been activated from a mains failure or 'Initiate' input, it will produce 3-Phase power for two minutes allowing a power door or gate to cycle normally, it then reverts to a 'Sleep' state to conserve battery power. If the Initiate input is re-triggered, then power will be generated for another two minutes.

While battery life is largely determined by motor capacity and door/gate size, the standard battery pack will typically support 20 door cycles under a mains failure event and often many, many more. The Sure Power system is capable of remaining in the Sleep state for a full 48 hours in the absence of an AC Supply.

A Yellow BATTERY TEST indicator will flash slowly while the unit is in the Sleep mode.

Note that when the FIRE input goes OPEN, this event is given the highest priority. In this condition, both the Sleep mode and the 3-way Manual Control switch is overridden and the 3-Phase output will remain active for the remaining charge time of the battery pack.



Initiate Output

A special output contact is provided that will change state 7 seconds after the AC output is made available from the battery operated inverter system. This contact can be used as a control signal to force a door or gate to an open or closed state a few seconds after the door/gate controller has powered up. (Many door controllers will not respond to external commands unless they are made a few seconds after power has been first applied)

Mains Failure Detection

The **240VAC supply** is continuously monitored by the Sure Power unit. While in the 'Automatic' position, if the utility mains should fail the unit will immediately commence a sequence to supply 3 phase power from the backup battery source.

Battery Charging and Supervision

An automatic battery charging system ensures that the batteries will be returned to a fully charged condition as soon as possible after mains fail event has terminated. At the end of each minute one of the six battery banks will undergo a Charge and Test sequence. The test sequence involves automatic voltage checks during a brief discharge cycle into an internal test load.

If the battery pack passes this test the Battery Status indicator remains Green. If a test fails, the suspect bank will be flagged with a Red indicator.

Where the Sure Power unit has been required to operate for some time, the battery banks may be in a partially depleted state when mains power is re-applied. It is not unusual for one or more of the battery bank indicators to show **RED** for up to 12 hours while they are still being recharged.

If any of the six battery status LEDs remain **RED** for more than **24 hours**, it is likely that one or more batteries is in poor condition and the auxiliary **Batt Alarm** contacts will change state.

Installation

The SURE POWER is a wall-mounted cabinet, 800 x 600 x 200mm. It must be installed by a qualified Electrician. Batteries are provided in a separate package and are loaded into the Sure Power unit once the wall mounting step has been completed.

Power wiring connections are made at isolating Circuit Breaker switches within the unit.

Other connections are made to clearly labelled screw terminal blocks.

A full installation guide and checklist is provided with each Sure Power unit.



Input & Output control wiring terminals

Specifications

Single Phase Supply:	230-250VAC, plus Neutral connection
3-Phase Output:	400VAC nom @1.5kW (2.5kW model available)
Neutral output:	240VAC nom @ 400W w.r.t L1.
Batteries:	6 banks of 7 batteries Each battery = 12V, 1.2 A/H Plus 12V, 7A/H control battery
Enclosure:	Powder coated steel, IP65
Weight:	90 KG.

Warranty

Sure Power systems carry a 3-year warranty on system hardware, but this does not include batteries. While a 3 year battery lifespan is considered normal, the internal batteries used with each Sure Power unit only carry a 12 month warranty valid from the date of system installation. This is due to limitations placed by the manufacturers of the batteries. (A full description of Warranty Terms & Conditions is available upon request and also appears within each installation manual.)

Distributed By:

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