



Powerboss Product Profile

Heavy power bills are out



Super Saver is in



cut down your power cost up to

40%

Powerboss



Save Energy



Save Money



Save Environment

Power boss – Profit through Intelligence

“Your complete fixed speed motor solution”

The standard control system for motors in use can not feed the exact current required to match the demand torque, the excessive current fed to motor increases the losses, increase the motor temperature, noise, and subsequently reduce the motor life or leads to frequent motor failure. In order to overcome this control problem an Intelligent motor control is designed and developed in UK by POWERBOSS. The said controller has the built in quality of Soft start, and with its powerful microprocessor embedded in a unique control software, POWERBOSS provides a simple and effective control solution to most fixed speed applications, by constantly monitoring the 'efficiency' of the motor and ensuring the input power to the motor is matched exactly to the load as it changes. Even the slightest variation in the demand will be sensed and the adequate voltage will be supplied to motor terminals in 1/100 th of a second. Motor speed and full torque potential are not adversely affected in any way. Where appropriate the unit can be programmed to detect long periods of NO LOAD at which point the motor can be automatically switched off adding further significant benefit.

Powerboss

Powerboss is one of the finest **soft starters** in the world with a wide range of adjustable features that allow you to start even the most awkward load with ease. Fully adjustable ramp times from 0 – 255 seconds give you the ultimate flexibility. For high inertia loads current limit will provide you with a reduced current start. A Kick-start facility will help you to get things moving on loads with high static friction.

For Smooth Starting

High inrush current and uncontrolled torque when starting your motors almost certainly causes your problems. This is an unnecessary worry as there is a solution that is well proven and readily available. The advantages of using a soft starter as opposed to, for example direct on line or star-delta are now comprehensively documented.

The soft start is in effect an electronic clutch. Gradual uptake of power, **smooth, step-less acceleration, less stress** on you and your valuable equipment. Why make problems for yourself?

For Controlled Stopping

Alternatively, there are a number of situation where you may need to stop your applications under controlled conditions for safety or operation reasons. An application with high inertia such as a circular saw will require a brake to be applied; this can be an expensive addition to the application. Powerboss can be configured to reverse the incoming supply and provide controlled braking, bringing the load to a safe stop.

Powerboss is a highly cost-effective method of tracking all the above and insuring yourself against the unforeseen mal-effects of uncontrolled stopping.

Powerboss will quietly work on your behalf to....

- Ensure that your motors only consume the energy that they require
- Switch your motors off automatically when they are not needed
- Significantly reduce your energy bills
- Protect the motors from excess heat and vibration
- Reduce levels of unscheduled breakdowns

“ Powerboss is the soft-starter that pays for itself”

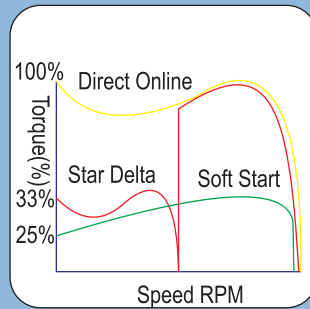
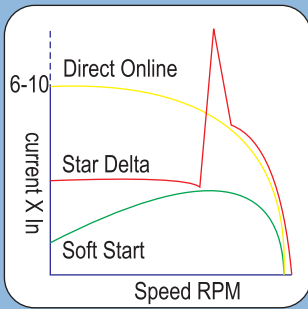
“Complete fixed speed motor control – starting, running, stopping.”

For Efficient Running

Due to variable duty cycles, many of your motors probably run at less than 50% of their capacity for much of their duty cycle, but consume much more electricity than they actually need. This excess consumption is not only an unnecessary cost on your energy bill, but it also serves to damage your equipment as the excess energy is released through the windings of the motor in the form of heat, vibration and noise.

Powerboss will give your motors intelligence. By monitoring the load on the shaft of the motors every cycle of the supply, Powerboss will feed your motors the electricity that they require to run efficiently at any point in the duty cycle. Powerboss integrates fully with its surroundings, and can even switch your motors off automatically when they are not being used, or use stored energy in certain applications (such as flywheel mechanisms) to reduce your electricity consumption even further.





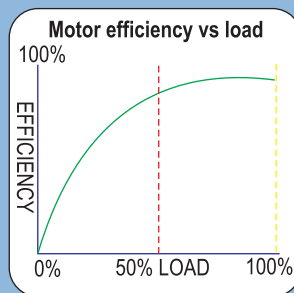
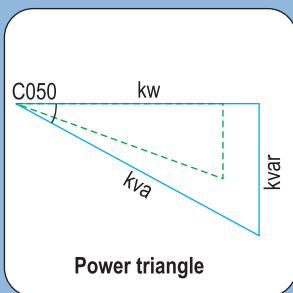
Note :
The graphs illustrate the comparison of both current and torque between Direct Online, Star Delta & Soft-start methods.

One box offers you a complete fixed-speed motor solution

Where & how should you use Powerboss?

Motor efficiency – The theory

Basic motor theory highlights that A/c Induction motors become increasingly inefficient when operating at less than 50% of their rated load. The efficiency curve on the right is a reminder of that relationship.



Due to motor torque being proportional to the square of the applied voltage it is possible to reduce the applied voltage, to match the motor torque to the load torque, according to the job of work that the motor is doing at any point in the duty cycle. Reducing the voltage reduces apparent power (kVA), active power (kW) and reactive power (kVAR). The illustration on the left shows the relationship between kVA, kW and kVAR.

How does Powerboss Work?

In Practice

Powerful digital technology has allowed Powerboss to utilise well established soft start engineering solutions to good effect whilst the motor is running. By adjusting the switch-on point relative to the voltage zero crossing in each half cycle of the supply, it is possible to regulate the current flowing through the thyristors by controlling the voltage. The thyristors are switched on at a calculated point in the waveform; the closer this is to the zero crossing point in the waveform, the smaller the value of the current that will be allowed to flow.

Using this principle and by connecting two thyristors in anti-parallel to each of the phase connections of a motor, Powerboss continuously adjusts the voltage to the motor terminals by precisely controlling the thyristor's switch on points. Continuous dynamic control is applied to your motor through a micro controller embedded with unique software.

Powerboss controls the motor at fixed rated speed.

The Powerboss unit is also designed to consistently monitor the flux from the motors, and thus is able to maximize potential savings without stalling the application, adversely reducing its speed or altering its ability to effectively carry out its job of work at any point in the application duty cycle.

“The Concept is brilliantly simple – The results simply brilliant”

- Powerboss will quietly work on your behalf to....
- Ensure that your motors only consume the energy that they require
- Switch your motors off automatically when they are not needed
- Protect the motors from excess heat & unscheduled breakdowns

- Powerboss works hard on your behalf....
- Assessing the load on the motor every cycle of the supply
- Adjusting the voltage proportionately to the load
- Putting you in control



Where & how should you use Powerboss?

	Plastic Injection Moulding Machines	Power Presses	Aggregate Crushers	Timber Saws	Granulators	Compressors	Pump-Jack Oil Pumps	Hydraulics	Cutting Oil Pumps	Textile Machines	Water Pumps	Fly-wheel Applications	Conveyors	Sewing Machines
General Control														
Soft Start	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Optional DOL Start														
Current Limit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kick Start						✓						✓	✓	✓
Soft Stop												✓		
Plug Braking			✓										✓	
Energy Saving	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special Features														
Timed Cutoff	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Stored Energy		✓	✓										✓	
Signal Optimisation	✓	✓	✓				✓						✓	
Controlled Star/Delta	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semi Controlled Star/Delta	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Belt Breakage Protection		✓		✓	✓	✓			✓			✓	✓	
Dry Well Protection											✓			

Practical and easy to apply

The result of over a decade of field consultation

Powerboss has been developed over a 12 year period to satisfy the real needs of industry and business in today's fiercely competitive commercial climate.

Simple to install

The unit can be installed 'direct on line', or in-line with an existing star-delta starter. General connections are similar to other popular soft-starters.

Clear and concise commissioning

Commissioning of Powerboss units is via a digital programmer and hence is clear, concise and highly adjustable.

Low maintenance

The only maintenance that you need worry about is cleaning from time to time, and ensuring that the fans are operating effectively.

Powerboss makes it easy

- Practical and useful functions
- Designed to integrate with your systems
- Looks after itself
- Reduces general maintenance and contact wear
- Answers all your power conservation questions

SARVESH ENGINEERING

Address : Plot No, 9, Shridhar colony, Karve nagar, Pune 411052, India.

Phone : 91 98 23589998

Fax : 91 20 2544 9998

Email : sarvesh.e@vsnl.net

