

Frequently Asked Questions

Q. How does the Ecopower Motor Energy Control (EMC), work?

A. The EMC is an extended Soft Start with some very smart software which enables it to identify when the motor to which it is attached, is running at less than full power. During these times it is possible to reduce both the voltage and the current supplied to the motor without reducing the motor speed. In effect Ecopower is always providing sufficient, but not too much, torque, continuously adjusting the power to just the right level, analogous in many ways to the cruise control you may have on your car.

Q. What motors is it possible to fit the Ecopower Motor Energy Control on?

A. It is possible to fit an EMC to any three phase synchronous AC induction motor, (also known as a squirrel cage motor), and any slip-ring motor, (including motors with DC rotor injection start systems).

The single phase systems can be fitted to any AC Induction motor whether with or without capacitor start and with or without capacitor run systems. It is unimportant how new or old the motor is.

Q. Can Ecopower Motor Energy Controls and Soft Starts be fitted to High Efficiency motors?

A. The simple answer is yes. Ecopower systems work just as well with high efficiency motors as they do with lower efficiency or older motor types.

Q. What savings can I expect when I fit an Ecopower Motor Energy Control?

A. This is a very complex question because there are so many aspects to what creates effective savings. Primarily on three phase systems the thing to examine is how much the motor is loaded; that is how much current it is drawing when measured against the full load current specified for that motor. If the motor is running at greater than 75% loaded on average, then it is unlikely that you will get any reasonable savings levels. Below this 75% level the savings increase steadily to peak at around 20% when the motor is around 40% loaded. (Other factors come in to play here such as the line condition, the age and quality of the motor, the ambient temperature etcetera). We have achieved savings of over 35% on certain applications where everything was favorable to savings and the motor was lightly loaded for a great part of its operational time.

On single phase systems the savings that can be achieved are greater because of the inherent simplicity of the motor structure. Typically savings of between 30 - 40% are achievable on applications such as bottle coolers, refrigeration systems and similar. Again loading is the key measure of the likelihood that the system will be positioned to make energy savings.

Q. How long is the warranty of the Ecopower systems?

A. All Ecopower units are supplied with a full two year warranty. This does not mean that after this time we will ignore any problems that you have should they arise. We are striving to be the supplier we would like to have supplying us and as such will always respond to a Customers legitimate problems howsoever they are caused.

Q. What is the expected lifetime of the Ecopower unit?

A. All Ecopower systems are manufactured within the UK to very exacting standards within ISO 9001 qualified facilities. They meet the rigorous standards leveled on them by the various international inspection bodies such as CE and UL and we generally recognize that their lifetime

expectancy is around ten years. (The empiric calculations as defined by the IQAB indicate that the MTBF, (Mean Time Between Failure), for our systems, is greater than 100,000 hours, or a little over eleven years).

Q. Does an EMC change the motor speed?

A. Not in any way. The Ecopower Motor Controller units are fixed speed controls which do not change the speed of rotation. Rotation speed is determined by the number of poles within the motor and the supply frequency of the current provided to drive the motor. As an EMC does not change the frequency of supply and cannot change the number of poles in a motor it is not possible to change the synchronous rotational speed.

Q. How many starts can I allow the system to make per hour?

A. This is a function of the ambient temperature in which the control is operating as well as the size of the motor being started and the load on that motor. The limits are defined on the specification sheets but, because we oversize all of the power components within the Ecopower units, the number of starts is typically twice that of the competition units.

Q. What is the maximum operating temperature for the Ecopower units?

A. All EMCs are designed to operate continuously at up to forty degrees Celsius without any degradation or de-rating. Above that point there are de-rating's which have to be applied. For details of these please review the specification sheets associated with the system you are using.

Q. Can the Ecopower be used in conjunction with a BMS or PLC control system?

A. All EMCs have been designed with ease of operation and application in mind. The control circuits for the "start and stop" function and the "emergency run" function have been designed to allow simple closing of a circuit or alternatively either NPN or PNP, (pull low or pull high), zero-volt drive which will allow any form of PLC to be directly coupled to Ecopower without interface circuitry of any kind. Additionally we have established a "System Ready" output so that we can feedback ready capability to a PLC control circuit.

Q. Does the EMC radiate or generate harmonic currents?

A. All systems do generate some level of harmonic current. EMCs are however designed to minimize the generation of detrimental harmonic currents. Overall the contribution of Ecopower can be considered to be near zero.

Q. Can EMCs be used near other sensitive electronic systems such as PLC controls and BMS systems?

A. Because an EMC does not radiate or generate significant harmonic currents there will be no effect of fitting it close to any other system. Of course with larger motors there will be the effects of induced currents and stray magnetic fields around the feed and supply cabling so normal precautions should be observed in these circumstances.

Q. How environmentally friendly is Ecopower?

A. Ecopower is a company dedicated to the reduction of pollution and elimination of waste. The Ecopower systems have been designed with recyclability in mind so that most of the components within the system are either recyclable or are already using recycled materials. The heat sink and the casing are both made from recycled materials, no toxic components are used in the manufacture and, of course, the Motor Energy Control is designed to save energy which again is environmentally as well as economically friendly.

Q. Can the Ecopower units be placed outside or in harsh environments?

A. All Ecopower units meet the expectations of IP43 which means that whilst they will withstand a few drops of rain they will not tolerate a direct shower or a downpour so, if you want to place the units external to a building they should be within another waterproof cabinet which meets the needs of IP55 or greater.

In tropical environments EMCs can be provided with full conformal coating to the PCB to meet the needs of very high humidity atmospheres and reduce the possibility of solder bond or component corrosion as a result of high relative humidity.