

Report on 5.5kW Fan at Whitman Labs (Estée Lauder) at Petersfield, Hampshire (>30% Savings with Payback <1.5 Years)

This particular motor formed part of a site wide installation at Estée Lauder in the UK. Twenty eight EnviroStart three phase units were installed on motors associated with extraction fans, supply fans and air conditioning..

This particular system runs 24 hours a day, 320 days every year and is associated with fume extract on a “cream mixer” system. Apart from the direct energy savings opportunity afforded by the fitting of EnviroStart the Customer was also interested in reducing his costs caused by the ongoing replacement of belts associated with multiple daily starts.

The original start system used on this motor was DOL, (Direct on Line), (the standard with Whitman on all motors below 11kW). The fitting of the EnviroStart with its associated soft start and managed acceleration eliminated belt scream and also reduced the risk of contamination created through vibration on start up transmitting itself through the fan ducting causing dust to drop down into manufacturing.



EnviroStart Installation Adjacent to Fan Unit



Whitman Laboratories Main Site at Petersfield, England

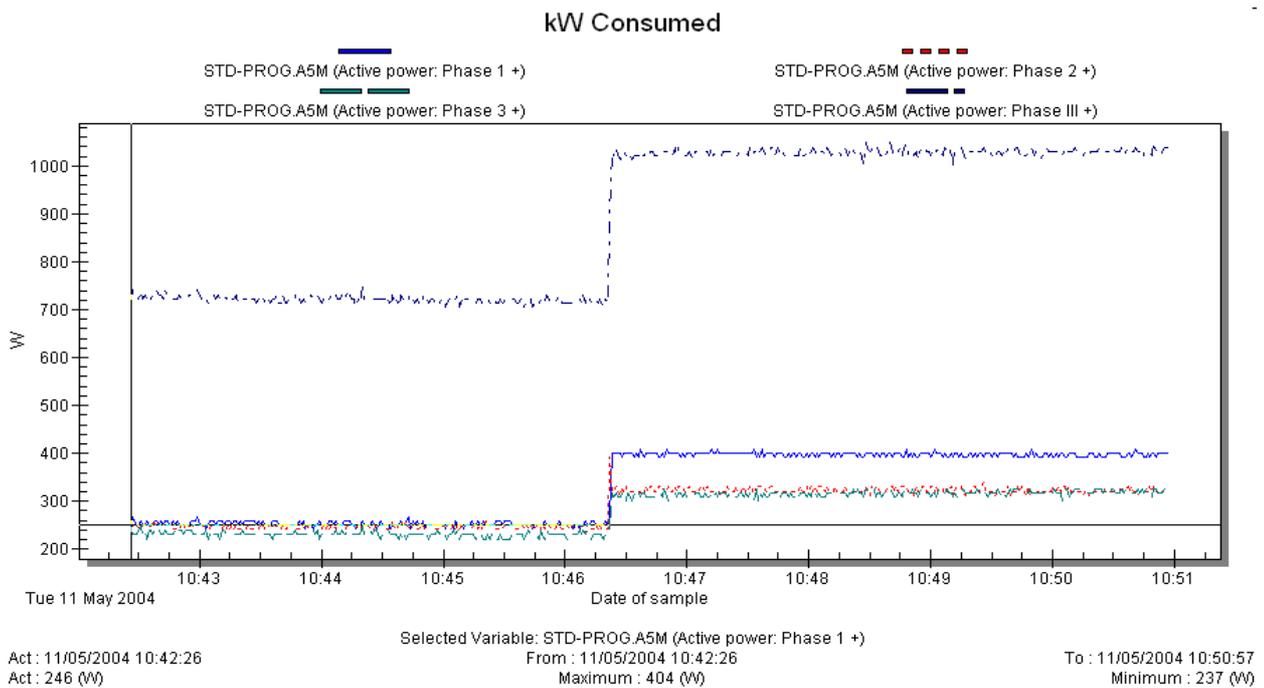
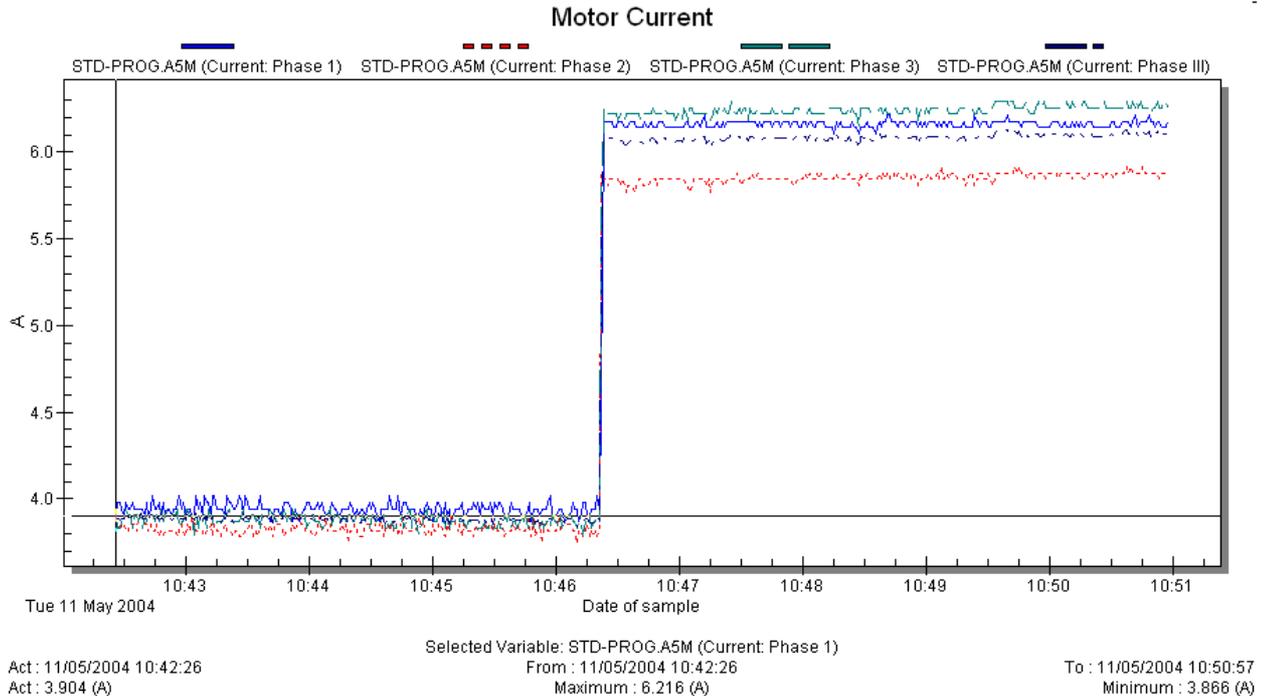
All settings on the EnviroStart at installation were as default per current Installation and Commissioning Guide v10.

Following installation the motor was started and stopped a number of times to ensure that current limits were not exceeded and also to ensure that the soft start function was optimal for the application.

The motor was left operational for around one hour before any testing was undertaken on site. This to ensure that all gear was running in normalised condition with bearings, windings and transmission systems all warm. All measurements accepted for this report were confirmed by a second set of readings taken approximately half an hour after the first set of readings were completed. This to ensure that the registers were representative .

Site voltage was depressed at the time of this evaluation sitting at around 398V throughout the period of the tests. Site line frequency was running at 49.9Hz but was wholly stable. Line condition was good, being fed from a separate 11kV underground incomer to an independent transformer. It is understood that the transformer tapping had been set low to assist with overall energy reduction processes implemented on site by the facilities management team.

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The Results:

Normalising the kW calculations based on standard formulas we established that during the period with the EnviroStart in energy save the fan motor was running at 2.59kW and without energy save enabled it was running at 4.102kW. This giving a net saving of >30%.

Based on the £0.032/kWh the payback period for this unit, including installation costs, was

Test Equipment Used:

Circutor A5M Three Phase Data Log Analyser (S/N 0268005/4) (Calibration Certificate to 31.5.2005)
NanoVip Plus Data Log Power Meter (S/N 17960) (Calibration Certificate to 10/2004)

**Report compiled by Dr. Jonathan
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