

Motor Energy Controls  
Soft Starts  
Digital Voltage Regulators  
Digital Pulse Regulators

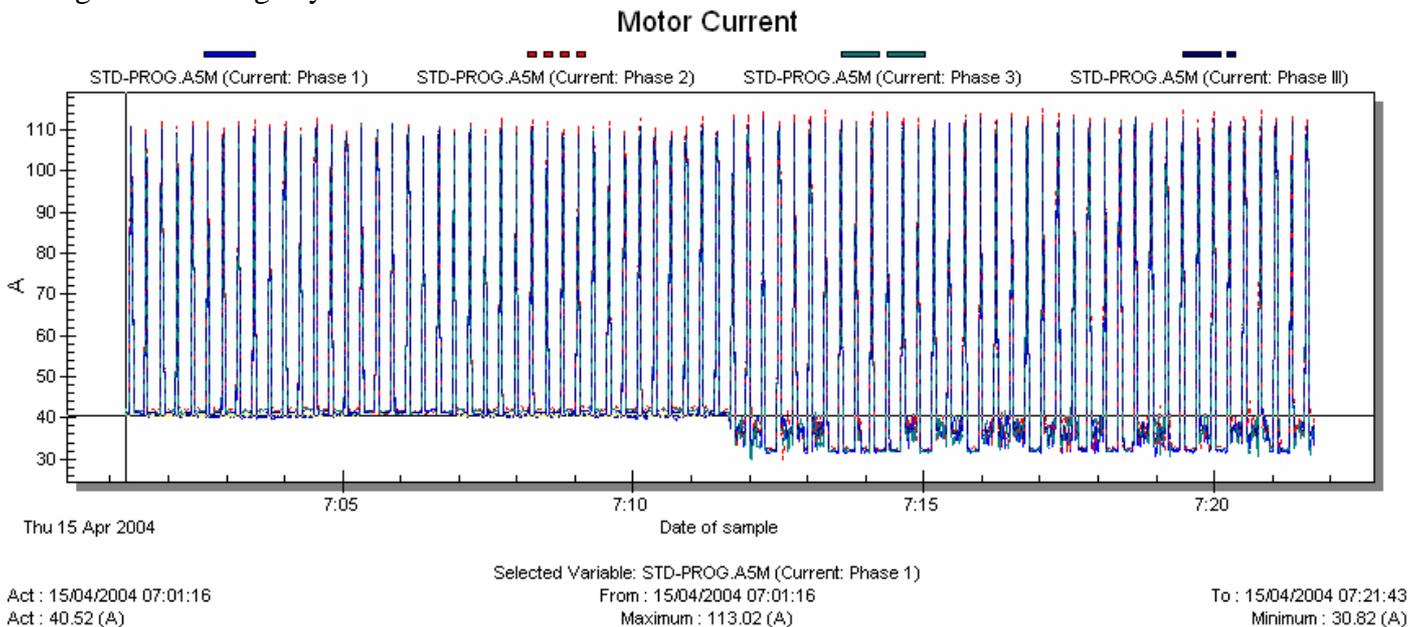
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## Report Regarding Installation of an EnviroStart on the 55kW Hydraulic Pump of an Injection Moulding Machine at Rika Plastics in Hornbæk, Denmark

This was a standard installation replacing a simple Star-Delta starter with an EnviroStart motor energy control. The DIP switch settings of the EnviroStart were all left in default. The Injection Moulding machine to which the unit was fitted was running with tooling requiring a cycle time of around 15s.

Supply conditions were generally good though the line voltage was nominally low at 386V. Supply capacity to Rika Plastics was such that operation of this system, (the largest individual motor on this site), did not cause any noticeable drop in voltage or current lag.

The test details presented were all collected on 15<sup>th</sup> April 2004 over a short period of twenty minutes however, based on the regularity and simplicity of the operation being performed, there is no reason to expect that the demonstrated conditions would change substantially from this time period to any other through the working day.

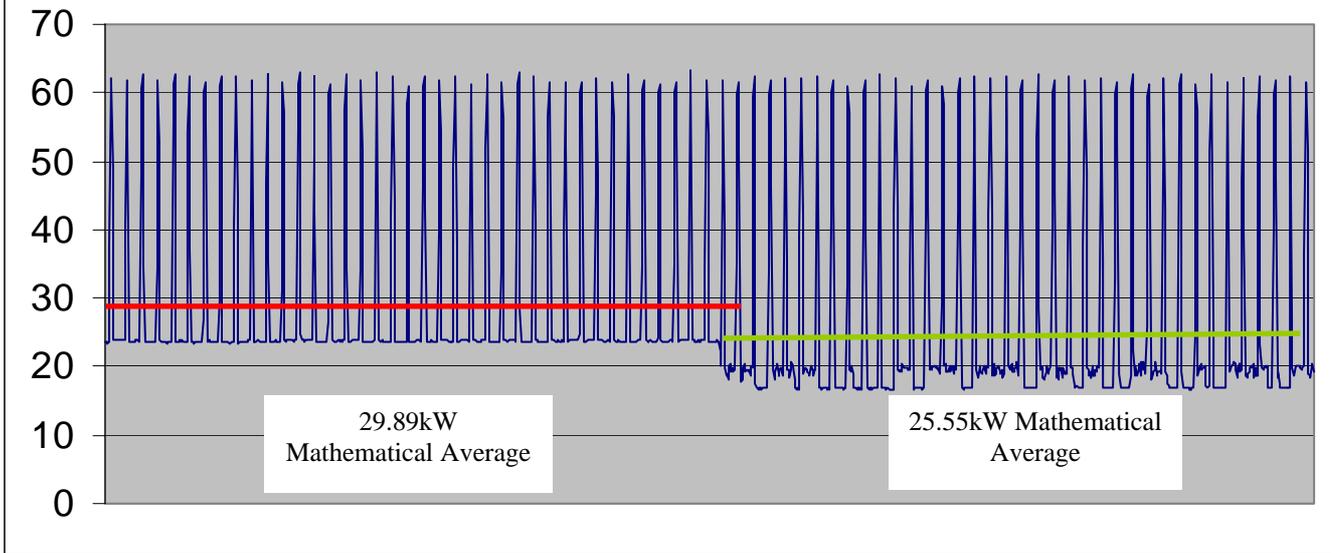


The cycle time period can be clearly seen and remaining consistent throughout the periods out of optimisation up to 7:12 and after optimisation was enabled from 7:12 to 7:23.

Average current prior to optimisation being enabled was 42A, following optimisation the average current was 33A. Mean current saving of 22%.

It can clearly be seen that with EnviroStart in place there was no change to the rise time of the motor current or change to the peak current of the motor at full load on tool closure.

## Rika Plas Injection 55kW Moulding Machine kW Measured



The above graph was generated using the base formula  $kW = \sqrt{3} \times V \times I \times \cos\theta$  with data taken at the time from the supply to the motor and is therefore a true reflection of kW reduction created by the use of EnviroStart on this motor. True energy savings are 14.5%.

16<sup>th</sup> April 2004

Jonathan Hughes and Martin Hollies  
For and on behalf of EMS (European) Ltd